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RURAL INFRASTRUCTURE
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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Increase in rural infrastructure leads to greater economic growth and a decline in the incidence of absolute poverty as people in the rural areas get greater access to markets and thereby better price for their produce. However, creating infrastructure needs large doses of capital formation.

It is estimated that investments in infrastructure needs to be doubled from the current level to help sustain growth in GDP.

The Planning Commission estimates that of the required investment, 65 per cent will come from the Government, 23 per cent from private sector and 12 per cent from multilateral or bilateral agencies.

While the Eleventh Five Year Plan (2007-2012) noted direct and significant causal relationship between the infrastructure and incidence of poverty in States, the approach to Twelfth Five Year Plan (2012-2017) laid renewed emphasis on creation of physical infrastructure like roads, railways, ports, airports, power and telecommunications.

Provision of Good quality infrastructure is a crucial prerequisite for sustainable growth. It is particularly relevant for India which is predominantly rural.

Better rural infrastructure not only provides better employment opportunities but increases production efficiency, thereby increasing growth.

However, infrastructure investment is irregular and inadequate to support 600,000 villages.

In order to build rural infrastructure on an enduring footing, the UPA government fashioned the Bharat Nirman scheme in its previous tenure with a view to ensuring inclusive growth by improving rural infrastructure in a comprehensive manner. In its second phase of implementation of Bharat Nirman (2009-14), efforts are afoot to provide electricity, safe drinking water, all weather roads, telephones and broadband connectivity to all eligible villages/habitations and substantially step up rural housing stock and irrigation potential.

Economic development of rural areas has a definite link with poverty reduction. Enough evidence of theoretical and empirical nature can be sighted in support of the argument. Investment in rural transport infrastructure stimulates the rural economy and hence acts as a tool for poverty reduction.

We discuss, in this issue the performance of Bharat Nirman and the challenges ahead for creating a better infrastructure in rural areas.
Infrastructure is treated as an engine of growth and provides a basic framework for economic and social progress in a country like India. Physical infrastructure strengthens the economy, boosts investment, attracts prospective entrepreneurs and helps alleviation of poverty and reduces unemployment incidences through numerous positive forward backward linkage effects of primary, secondary and tertiary sectors of the economy. Similarly social infrastructure like drinking water supply, sanitation, education, health etc. helps in improving quality of life of millions of rural inhabitants.

India’s economic reform measures of 1990s envisaged, inter alia, to improve infrastructure for enhancing the country’s productive capacity and for facilitating gradual reduction in the poverty and related deprivation. Around 83 crores (70 per cent) of our population are living in rural areas (Census: 2011 provisional). The large magnitude of rural population and their prevailing socio-economic conditions and quality of life calls for all-round development in rural infrastructure to achieve the long cherished objectives of equitable and inclusive growth with social justice. During the last six decades of planning period, the country’s economists and planners have identified the potential of a vibrant rural India to resolve issues of poverty and advocated for improvement and expansion of rural socio-economic infrastructure. While the Eleventh Five Year Plan (2007-2012) noted direct and significant causal relationship between the infrastructure and incidence of poverty in States, the approach to Twelfth Five Year Plan (2012-2017) laid renewed emphasis on creation of physical infrastructure like roads, railways, ports, airports, power and telecommunications.

The policy of privatization of power sector in various States has not reaped desired results in raising efficiency in generation, distribution and transmission of electricity.
Considering the importance of infrastructure in the sustenance of economic growth of our country, the GoI had launched a programme on rural infrastructure called ‘Bharat Nirman’ as a time-bound business plan for implementation in four years (2005-2009). The six components included under the programme were irrigation, drinking water, electrification, roads, housing, and rural telephony. This had also sought an active and transparent public and private partnership for immediate execution of various infrastructure related development projects with a mission mode. Although the Bharat Nirman registered considerable progress by 2009, non-achievement of goals set under the programme prompted the government to expand the timeline for completion of targeted activities to 2012. The present paper attempts to highlights the progress of each of the components and the policy outlook of the government for its successful completion within the targeted timeframe.

**Rural Roads**

Bharat Nirman envisaged providing connectivity to all habitations of 1,000 and above (500 and above in the case of Hill States including North East, Tribal and Desert Areas) by 2009. Up to March 2010, around 34,000 villages were provided all weather road connectivity through construction of 96,000 kms of roads. Systematic District Rural Roads Plans were prepared listing out the complete network of all roads in the district i.e., Village Roads, Major District Roads, State Roads and National Highways and construction and allocation of resources were prioritised. To ensure quality in construction of rural roads, a vigorous quality control measures were followed backed by independent quality checks and measurements. The inbuilt clause of five years maintenance within the construction contract has helped in maintenance of the newly created assets. Upto June 2011, as many as 40,712 habitations (74.5% of the target) were provided connectivity under this programme. The achievement in case of new connectivity and upgradation of road infrastructure were 68.5 and 90.7 per cent, respectively as in June 2011 (Table 1).

**Table 1: Progress of Rural Road Infrastructure under Bharat Nirman**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Target (2005-09)</th>
<th>Achievement (cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Habitations (in Nos.)</td>
<td>54,648</td>
<td>31,924 (58%)</td>
</tr>
<tr>
<td>New Connectivity (Length in kms.)</td>
<td>1,46,185</td>
<td>85,405 (58%)</td>
</tr>
<tr>
<td>Upgradation (in kms.)</td>
<td>1,94,131</td>
<td>1,55,019 (80%)</td>
</tr>
</tbody>
</table>

Sources: (1) Mid-Term Appraisal for Eleventh Five Year Plan 220712
(2) http://bharatnirman.gov.in
Note: Figures in the parentheses are per cent to total as indicated in col. 2

**Irrigation**

Indian agriculture is primarily rain-fed. While the goals of agricultural plans in India have aimed at food and fodder availability, growth in agriculture, sustainable agro-practices, easy access to agro-inputs, creation of irrigation potential in the country and expansion of installed capacity of various irrigation projects have been important policy objectives of India’s development planning. By 2005-06, a large number of irrigation related projects were facing financial constraints and the investment already made in these projects were treated as ‘sunken investment’. In 1951, the irrigation potential from major and medium irrigation was about 10 million hectares and from minor irrigation projects was 13 million hectares. By 2006-07, the total irrigation potential created was 103 million hectares.

The Bharat Nirman ambitiously targeted creation of an additional 10 million hectares irrigation potential by 2009-10. At end March 2010, the country could achieve creation of additional irrigation capacity of 73 lakh hectares, thereby leaving a gap of 27 million hectare irrigation potential. It was during the second phase (i.e. 2010-11 and 2011-12), in which the creation of irrigation potential surpassed the original target fixed for this component by 1.16 million hectares.

While the achievement of targets on creation of additional irrigation potential is praiseworthy, it is desired that the irrigation potential so created over the years should be fully utilized and gap between
the potential created and the actual utilization narrowed. Fully utilization of irrigation potential requires actions like (i) timely completion of field channels and drains (ii) appropriate land leveling and shaping (iii) involvement of farmers in taking decisions on usability of such created potential.

**Rural Water Supply**

Against 55,067 uncovered habitations to be covered during the Phase-I of the Bharat Nirman period (2005-09), 54,477 habitations were covered by March, 2009. The remaining habitations, of which many were in difficult areas lacking sustainable sources of drinking water, were covered by March 2012. The strategy adopted to cover uncovered habitations which include both Not Covered and Partially Covered habitations is to ensure that the rural population gets at least 40 liters per capita per day of safe water from sources lying within the village or nearby.

Studies indicate that the ever growing dependence on groundwater and its unsustainable over-extraction are lowering the ground water table and adversely impacting rural drinking water. Planning Commission has found that between 1995 and 2004, the proportion of unsafe districts (semi-critical, critical and overexploited) has grown from 9 per cent to 31 per cent, the proportion of area affected grew from 5 per cent to 33 per cent and population affected from 7 per cent to 35 per cent (Planning Commission, 2010).

The major challenge before the government is now 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 (b) sustainability of quality water supply to areas covered under the Bharat Nirman programme. The Eleventh Five Year Plan (2007-2012) has called for convergence of various rural development programmes of the government (such as mahatma Gandhi National Rural Employment Guarantee Act, Backward Region Grant Fund, watershed development, restoration of water bodies, etc.) backed by a need-based village-level water planning.

**Rural Housing**

Under Phase I of the Rural Housing component of Bharat Nirman, 60 lakh houses were to be constructed through the Indira Awas Yojana during 2005-06 to 2008-09. Against this target, 71.76 lakh houses were constructed. During the financial year 2009-10, as against the target of construction of 40.52 lakh houses, 33.87 lakh houses were constructed. It was proposed to double the earlier target and to construct 120 lakh houses during the next five-year period starting from the year 2009-10. Against this, 65.87 lakh houses have been completed by 31st March 2012.

While the physical progress in the provision of rural housing is much more than the Bharat Nirman target, the involvement of beneficiaries in the construction of the house under the scheme was not found to be satisfactory. 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 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 IAY 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 Telephony**

India has witnessed a rapid expansion of the telecommunication sector. This has led to 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. As in 2005, as many as 66,822 villages were without telephone connection. The Bharat Nirman programme was expected to provide every Indian village with telephone access by end 2007. The successful implementation of this programme has registered increased teledensity in rural areas. The rural teledensity in 2009-10 was 15.11 and rose by 17.88 percentage points to 32.99 as on 28.02.2011. During phase II of Bharat Nirman, the target has been fixed for connecting 2.47 lakh village panchayats with broadband. By March
2011, as many as 1,10,695 village panchayats were connected with broadband facility.

The policy of connecting village panchayats with broadband will ensure seamless transmission of information and empower these grass-root level democratic institutions. Further, Common Services Centres (CSCs), established as a part of National E-Governance Programme (NEGP) has been repositioned through a network of Panchayat level Bharat Nirman Common Service Centres. This will ensure provision of Government services to all citizens in rural areas. CSCs have been and as on date 69,438 CSCs have been established.

Electrification

The power infrastructure plays a vital role in sustained economic development of a country. Quality of power supply and power accessibility has been a matter of concern in rural India as capacity addition in this sector has been falling short of its targets/demand. For example, the actual capacity addition during the Tenth Five Year Plan (2002-07) was only 19,092 MW against a target of 41,110 MW. The Eleventh Plan (2007-12) has an ambitious target of 62,374 MW against the actual capacity addition as on 31st March 2010 was 22,301 MW. The policy of privatization of power sector in various States has not reaped desired results in raising efficiency in generation, distribution and transmission of electricity. Keeping in view the power availability and accessibility situation and the importance of electricity in rural agriculture and allied sector, the Bharat Nirman vowed to supply electricity to 2.3 crore households in 1.25 lakh un-electrified villages within four years i.e. 2005-2009.

Accordingly, the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) focused to provide electricity to rural unelectrified villages. This programme, by June 2012, has ensured electrification of a cumulative of 1,05,314 villages. Free electricity connections have been provided to nearly 199 lakh below poverty line households. Under Phase-II, 72 projects with an outlay of Rs. 7964.32 crore. have been sanctioned by the Government with a view to electrify 1,909 un-electrified villages, 46,606 unelectrified habitations, 53,505 partially electrified villages, 25,947 partially electrified habitations and release of free electricity connections to 45.59 lakh BPL households.

To ensure quality and sustained power supply in rural areas, we now needs to switch over from free or subsidy driven power distribution system to a competitive user-based revenue collection and sharing model. The Mid-Term Appraisal of 11th Five Year Plan calls for active involvement of grass root institutions like PRIs, NGOs, Cooperatives etc. in revenue collection, local management, operation & maintenance of power infrastructure in rural areas.

Concluding Remarks

Successful implementation of the Bharat Nirman initiatives and timely and adequate follow up action on each of its components will enable rural citizens of the country to utilize rural infrastructure for ensuring their basic amenities and raising their economic and social status. A considerable part of the total expenditure under the programme is considered as development 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.

It is expected that the investments made under the Bharat Nirman in phase I and II would enrich the rural economy and narrow down the gap between rural and urban India by spreading growth benefits uniformly. To make this a reality, a synchronized approach is required to converge the infrastructure-building initiatives of Bharat Nirman components 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. Ministries/department Panchayati Raj, Expenditure, Rural Development, Drinking Water and Sanitation, Water Resources, Agriculture, Information Technology and Land Resources etc. need to work out broad consensus for implementation of the main principles of these rural infrastructure building initiatives. Planning Commission need to move in a coordinated and harmonious manner with various development Ministries and undertake periodic and close monitoring of the programme.

(The author belongs to Indian Economic Service and views are personal. E-mail: tripathy123@rediffmail.com)
Time was when most villages in India used primitive means to light up their houses and cook their food. These villages were out of the radar of electricity.

Today, “almost all the villages in the country have been electrified,” in the words of Prime Minister Dr Manmohan Singh. In his Red Fort address on August 15, 2012, he said the government would take steps to ensure that every house in every village would be provided with electricity in the next five years – 2017. Great news for the villagers!

However, performance and record so far have not been too encouraging.

According to a 2011 data given by the International Energy Agency, of the 1.4 billion people of the world who have no access to electricity, India accounts for over 300 million. Some 800 million Indians use traditional fuels - fuel wood, agricultural waste and biomass cakes - for cooking and general heating needs. The Agency estimates India needs an investment of at least 135 billion dollars to provide universal access of electricity to its population.

At the time of independence, there were a total of 1500 villages which had electricity. The country had since marched ahead and achieved electrification of over 493,000 villages by the end of July 2009.

In fact, the government in 2004 had promised that it would provide electricity to all villages by 2012. The programme in 2004 had envisaged 100% village electrification by 2009 and 100% household electrification by 2012. But the targets were missed. The original target, according to the Planning Commission, had envisaged electrifying at least 156,000 households per year for the following three years.

Village Electrification

Rural Electricity involves supply of energy for two types of programmes - production oriented
activities like minor irrigation, rural industries etc and electrification of villages.

According to an earlier definition, a village is classified as electrified if electricity is being used within its revenue area for any purpose whatsoever.

This definition of village electrification was reviewed in consultation with the State Governments and State Electricity Boards and a new definition was adopted. A village will be deemed to be electrified if electricity is used in the inhabited locality within the revenue boundary of the village for any purpose whatsoever. The number of household electrified should be minimum 10% for villages which are unelectrified, before the village is declared electrified.

Rural electrification was taken up in each of the Five Year Plan. Each Plan had programmes earmarked for village electrification.

While some of these programmes were implemented in certain designated schemes, others were implemented as routine plan implementation.

The rural electrification programme got a boost in the period of the third Five Year Plan, with the establishment of the “Rural Electrification Corporation” in 1969, with the mandate to finance and promote rural electrification projects all over the country. It provides financial assistance to State Electricity Boards, State Government Departments and Rural Electric Cooperatives for rural electrification projects.

It was only the third Five Year plan which almost achieved its target as far as village electrification is concerned, with some of the other five year plans not even reaching half of its slated targets of electrification. The first Five Year Plan (1951-56): Support for irrigation Projects. Track record of rural electrification was 1 electrified village per 200 villages.

Five Year Plans

The second Five Year Plan (1956-61): “Rural Electrification” declared as “special interest area”, and proposed to cover all towns with a population of 10,000 or more. Only 350 out of a total of 856 were eventually electrified. The third Five Year Plan (1961-66) ensured the establishment of the “Rural Electrification Corporation” and over 30,000 villages were electrified, as against a target of 37,000 villages.

The fourth and fifth Five Year Plan (1969-74 and 1974 -1979) focused on target areas such as energization of pump sets and also issued guidelines for village grind connectivity for all villages with a population of 5000 and above.

The sixth, seventh and eighth Five Year Plan (1980-89 and 1992-1997) saw a number of projects such as “improved chulhas or cook stoves”, “Bio-gas plants” etc. These plans also saw the establishment of the Ministry of New and Renewable Energy or MNRE. This period saw the launch of “accelerated rural electrification programme”

The ninth, the tenth and the current eleventh Five Year Plan (1997-2012) saw the launch of Kutir Jyoti Yojana and the Rajiv Gandhi Rural Electrification programme.

The rural electrification programme is currently under a comprehensive scheme called the “Rajiv Gandhi Grameen Vidyutikaran Yojana”, which was launched in 2005. This programme has taken over the hitherto existing schemes such as the “Kutir Jyoti Yojana” and also adopted some salient features of the earlier electrification programmes and initiatives of the Government such as, the Minimum Needs Programme, the Pradhan Mantri Gramodaya Yojana, the Accelerated Rural Electrification Programme and the Accelerated Electrification of 100,000 Villages and One Crore households.

The current programme envisaged the creation of a rural electricity distribution backbone with at least one 33/11KV sub-stations of adequate capacity in geographical blocks where these do not exist, a village electrification infrastructure with distribution transformers of appropriate capacity in villages and other habitations and decentralised distribution generation systems based on conventional sources where grid electricity supply is not feasible or cost effective.

The rural electrification programme aims at providing grid or centralized electricity to as many villages as possible and looks at a decentralized or distributed generation approach only in areas where grid infrastructure may seem difficult due to either tough or hilly terrains or remote areas which are not serviceable through normal transmission lines.

The rural electrification programme literally took off only in the mid 1950s, and saw a rather
steep growth in village electrification in the 1960s, 70s and 80s up till 1990. The three decades between 1960 and 1990 saw close to 450,000 villages being electrified. This puts the average number of villages electrified during that period at 15,000 per annum.

However, the period from 1991 to 2009 saw a huge slump in the speed of rural electrification, with just about 12,116 villages being electrified from a total of 481,124 electrified up till 1990 to 493,240 villages electrified up till December 2009. The average number of villages electrified in this period (1991-2009) was 637 per annum. In the mid 1990s and early 2000, India saw a wide range of reforms in the electricity sector, starting from unbundling of the various operations in the sector such as, generation, transmission and distribution amongst separate companies, privatizing some of the operations, introducing a regulatory framework both at the central level as well as the state level and in the formulation and promulgation of a new electricity act to replace all the then existing laws governing the electricity sector.

The period since the mid 2000 continued to see a slump in the progress of rural electrification primarily due to the challenge of providing transmission and distribution infrastructure to rural areas. With the villages closer to the grid and the major towns and cities having already been electrified, what remained un-electrified were villages which were far from the main grid lines and towns. Experts say that the fact that the governments were determined to provide villages with centralized grid electricity connection and not look at decentralized models was the main problem of slow electrification and continues to remain the main problem.

Estimates

The International Energy Agency estimates India will add between 600 GW to 1200 GW of additional new power generation capacity before 2050. This added new capacity is equivalent to the 740 GW of total power generation capacity of European Union (EU-27) in 2005.

As of December 2011, India had an installed capacity of about 22.4 GW of renewal technologies-based electricity, exceeding the total installed electricity capacity in Austria by all technologies.

There are a few designated programmes, including renewable energy schemes that are now being implemented with some success.

Under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) programme, 90% capital subsidy was provided for rural electrification infrastructure. The remaining 10% was loan assistance on soft terms by REC. The scheme, inter-alia, provided for funding of electrification of all un-electrified Below Poverty Line (BPL) households with 100% capital subsidy. The scheme aimed at electrifying all un-electrified villages over a period of four years and provides access to electricity to all rural households. India has over 600,000 villages and hamlets put together, with over a 100 Million households in the rural areas alone.

The National Solar Mission

The Government in November 2009 approved the Jawaharlal Nehru National Solar Mission, which creates policy conditions for quick renewable energy diffusion across the country. 20,000 MW of solar energy is to be deployed by 2022 through leveraging domestic and foreign investments, engaging in research and development, manufacturing and deployment to make this sector competitive internationally. In 2010, the Mission has gained investments in 200 MW of grid-connected solar power plants, with another 500 MW to be implemented soon.

Wind and Hydro Energy Expansion

The Ministry of Non-conventional Energy Sources has introduced generation-based incentives, where investors receive a financial incentive per unit of electricity generated over ten years. This should create a level playing field between domestic and foreign investors, which should drive more investment in this area. The Global Wind Energy Council (GWEC) estimates conservatively that the wind energy capacity in India could be 24 GW by 2020 and 30.5 GW by 2030. If all planned policies are implemented and all current targets met, capacity could be as high as 40 GW in 2020 and 108 GW in 2030.

Presently, small hydro (up to 25 MW) has capacity of over 15,000 MW in India. About 300 MW per year (2,700 MW total) is being installed, with 70% of investments coming from the private sector. Hydro projects up to 25 MW capacities are termed as small hydro, and this energy stream has a potential of over 15,000 MW.

The aim is to double the current rate of growth, including 500 MW per year in the next few years.

[The author is a senior journalist, based in New Delhi.]
Ict Infrastructure and Services for Rural India

As of 31st March 2012, rural teledensity was 39.26% and this is almost entirely made of mobile phones. As on 2011 over half of rural households own phones. There are of course regional disparities. The states of Chhattisgarh and Orissa have very low penetration while Kerala, Punjab etc. have very high rural penetration. As per the data of the Department of Telecommunications (DoT) there would be relatively few (5%-6%) villages in the country which do not have mobile coverage at all. These are being specially focused on by DoT so as to ensure universal mobile coverage in the country. However, rural broadband penetration is negligible and Census 2011 reveals that only 1% rural households own a computer with internet.

ICTs are known to be facilitators of socio-economic development. In rural India with its obvious lack of basic facilities by way of health, education, financial services and employment avenues etc., ICTs can help to bridge gaps by providing access to internet and mobile enabled ‘e’ and ‘m’ services. ICTs can make knowledge and employment opportunities, education, health, financial and government services etc. available to rural Indians. Certainly, the notable growth of rural telephony, especially mobile telephony has brought improved connectivity and this would have contributed significantly to socio-political and economic mainstreaming of rural India in the past decade. However, much more needs to be done if...
the benefits of telecommunications connectivity are to translate into overall rural development.

**Broadband**

Improving broadband penetration is a key focus area for the Government and this is being addressed actively by the Department of Telecommunications (DoT) and the Department of IT (DIT). The National Telecom Policy 2012 lists the use of mobiles as an instrument of socio-economic empowerment for citizens as a mission statement. It sets targets of 70% and 100% rural teledensity by 2017 and 2020 respectively. It lays special emphasis on providing reliable and affordable broadband access to rural areas. It also targets provision of high speed and high quality broadband access to all village panchayats through a combination of technologies by the year 2014 and progressively to all villages and habitations by 2020. The draft National Policy on IT 2011 speaks of electronic delivery of public services and use of ICTs for key social sector initiatives to promote equity and quality. This includes mobile value added services (mVAS).

**USOF**

DoT’s Universal Service Obligation Fund (USOF) already launched a Wire line Broadband scheme in 2009. Under this scheme, 360,000 connections had been provided till April 2012. With the auction of 3G spectrum, it is expected that the rollout of broadband facilities in rural India would follow over the next five years as prescribed under winning operators’ agreements with DoT. For uncovered areas, USOF would put in place a Rural Wireless Broadband scheme. USOF is also to fund the National Optic Fibre Network (NOFN) now christened Bharat Broadband Network Ltd (BBNL) which shall soon connect 2,50,000 village panchayats and co-located *Bharat Nirman Kendras* with Optic Fibre thereby providing high speed broadband facilities. Bandwidth from NOFN will be available to eligible service providers to provide broadband and broadband enabled services in rural areas. Even as connectivity improves steadily, what rural India needs urgently is electronically delivered information, knowledge and urban quality services. This translates into a huge market opportunity for providers of ICT enabled access to information, education, health, financial services, commerce and employment opportunities etc.

**Mobile Value Added Services**

A good example of mobile services is the recent USOF pilot project scheme for mobile value added service (mVAS) for rural women’s Self Help Groups (SHGs). This is a part of USOF’s *Sanchar Shakti* programme. In this scheme, SHGs’ information needs are identified based upon their main entrepreneurial/income generation activities and relevant information is then delivered in local language through mobile phones. It could be through SMS (if the women are literate) or otherwise though Outbound Dialers (OBDs) and Integrated Voice Response Systems (IVRS). The focus is on skill building and income enhancing information (training, market opportunities, input and output prices, weather, crop/livestock care etc), but information is also provided on health, education, women’s empowerment and local government schemes. Even in its early days this scheme has demonstrated that rural women are extremely responsive to information. They were able to vocally and precisely demand pertinent information/data. In Uttaranchal, SHGs wanted to know how to obtain a license to sell forest produce (which they gather and process) rather than depend on intermediaries. They are very keen on information about market prices and women’s health.

In Rajasthan’s Ajmer district rural mothers wanted information on educational and job opportunities for their daughters. SHG members from Kanyakumari, (Tamil Nadu) villages were very keen on improving profit margins from the sale of their cottage industry products and wanted appropriate SMS inputs. Many women who had earlier studied
till class five or six were reviving their long forgotten reading skills thanks to their eagerness to read the mVAS content. Across the board, women farmers were extremely receptive to and interested in crop related information (sowing techniques and timings, disease prevention etc). It is perhaps not widely known but 80% of economically active women in India are involved in agriculture. Information on government schemes was valued highly and acted upon promptly. MNREGA related information too was in high demand. As of now rural women hardly constitute a target segment for rural mVAS and this project was designed not only to cater to the needs of rural women but to demonstrate the demand for such women-specific content to mobile services and content providers. It must be mentioned that there are others such examples of mVAS initiatives such as those of Self Employed Women’s Association (SEWA) and Barefoot College in Ajmer.

Ministries such as Women and Child Development and agencies like UN Women are actively considering mVAS for target groups like Anganwadi workers and women Sarpanches respectively. The fact that even this unexpected market segment responds so positively to information, demonstrates the tremendous potential of relevant, knowledge based content and hence the market potential for sale of relevant rural mVAS in local language.

While many government agencies and private agencies such as Reuters Market Light and IFFCO are already providing mVAS to farmers, it is felt that a much broader spectrum of informVAtional/services needs of rural population can be successfully met through creative use of. Cases in point are Operation Asha’s Compliance programme of biometric based e-tracking of tuberculosis treatment and mobile text based follow up and Andhra Pradesh’s mFoods Programme to track food delivery and nutrient related activities for service of anganwadis (day care centres) and Child Development Project Offices (CDPOs). Examples abound and need only to be replicated and scaled up.

**Distance Education**

The lack of higher education facilities in the vicinity of their homes makes rural India the ideal market for distance education services. The Sanchar Shakti scheme in Rajasthan demonstrates that in spite of the family’s desire to educate its daughters, a rural girl can only study beyond the secondary school level if higher education facilities or distance education opportunities are available in the village itself. In the present context of rural educational infrastructure, this translates into the need for e-enabled study centres which the Bharat Nirman Kendra can provide. It also points to the need for public access to broadband facilities in every Indian village. Apart from education and medical facilities, employment opportunities and government services etc can be made accessible too. For example, Naukri SMS brings together prospective employers, blue collar employees and skill trainers. The utility of ICT-enabled services to provide a feedback mechanism to rural Indians is often overlooked. *MeraSwasthya-MeriAwaz* is one such m-governance programme where women in Azamgarh and Mirzapur can now complain if they are wrongly charged for government mandated free services by Public Health Centres. Such feedback is critical for successful governance and would be a great pull factor leading to demand for ICTs. Mobile banking is another area where ICTs can overcome deficient infrastructure. Only 31% of bank branches are located in rural India. The success of mobile banking for the poor has been already been demonstrated by Kenya’s M-Pesa of Kenya and Philippines G-Cash initiatives.

**Rural India and Broadband enabled National Growth**

Contrary to the commonly held notion there is a fair demand for broadband in rural areas. Already there are more internet users in small towns than the top eight metros put together. Interestingly more than 20% users are school children and 10% users belong to lowest socio-economic strata. While only a minority of rural Indians may be able to afford individual access to broadband on account lack of computing devices and power, this does not imply a lack of demand for broadband enabled services. In interactions during the verification of USOF’s wire line broadband scheme, it has clearly emerged that better off rural families across the country do buy computers for the same reasons
as urban families do, i.e. children’s education, knowledge and entertainment or as an aid to their incomes/businesses. They would relish good broadband connectivity as much as urban Indians do. The fact that the USOF scheme offers Rs 99/- and Rs 150/- monthly subscription plans (with no installation/registration/installation charges) is a plus point but 60% of rural users actually opt for higher value plans. With the availability of low cost devices like Aakash as smart phones become increasingly affordable, the demand for individual access to broadband will increase further. There is also a healthy demand for public access broadband facilities. This is logical in the face of near absence of local infrastructure and services. Just as an urban Indian searches online when looking for a new or locally unavailable information, service or product, rural Indians too would like to research/access the same online. This is a rural reality even today. Booking journey tickets online is a simple example. If credit cards are a problem intermediaries (village level entrepreneurs (VLEs)) with credit cards step in to facilitate transactions. VLEs also facilitate online money transfers, download mobile software etc. Skype is just as useful and popular amongst rural Indians as a means to reach out to relatives in cities/abroad. This demand will only grow as the rural literacy rate rises beyond the current 68.91% and knowledge and e-connectivity increasingly become key to empowerment. The demographic profile of our country means that more than 50% rural Indians are less than 25 years old. They have the same affinity for the worldwide web as urban youth.

Rural India attracts e-Commerce

A recent article in the Time magazine highlighted the growing potential of e-commerce in India. Going by the current success of e-tailing and anticipating the tripling of Indian internet users to 230 million odd by 2015, India is slated to be a very attractive e-commerce market. Rural India already accounts for about 50% of sale of FMCGs, consumer durables and services and it may be assumed that broadband enabled e-commerce would be a bigger hit in villages where media exposure is at par but shopping options are limited. It is a fact that rural India accounts for 40-60% of the sales of online retailing portals such as eBay.in, Snapdeal.com and Naptol.com. The latent potential of rural BPOs has been adequately demonstrated by successful examples such as Rural Shores, Desi Crew, Nextwealth, Xchanging etc. Given the rising salaries and high attrition rates of urban BPOs and in the context of improving rural connectivity, rural business and knowledge process outsourcing has huge potential as a business opportunity and as an employment opportunity for our youthful rural population including rural women (for whom migration to urban areas is not an option).

Conclusion

While the Government is rightly concentrating on encouraging rural ICT infrastructure, ultimately it is the services that ride on this network that rural India needs. These compensates for the lack of other infrastructure and services such as health, education, employment opportunities. Both Government and Private sector need to tap into ICT’s tremendous potential as a mode of delivery for rural services. ICT based development for Rural India is not just a national obligation but poses a huge and attractive business opportunity and a source of national economic growth. The healthy growth of both rural ICT Infrastructure and services would complement each other to revolutionise and mainstream rural India.

Disclaimer

Views are entirely personal and do not reflect the Government’s policy or stand on the subject

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Before discussing something about rural infrastructure, we must have the basic conceptual clarity regarding the term ‘infrastructure’. While attempting to define ‘infrastructure’, I can say that infrastructure generally refers to any physical asset or organizational structure that is capable enough to provide those benefits and facilities which are necessary for meeting the basic needs of a society or for promoting the quality of life of the people - leading towards a smooth functioning of the society/community/nation such as roads, housing, water and sewer systems, electrical grids, communications services, public institutions like schools, health facilities etc.

Keeping in view the current trends of infrastructure development as well as the opinion of different social scientists and development experts, broadly infrastructure may be categorised under two broad heads i.e. economic infrastructure and social infrastructure, based on the sort of facilities they use to provide to the society. Basically economic infrastructure provides those facilities that are indispensable for carrying out different kinds of economic activities like rural roads, bridge, rural credit institutions like rural banks, rural electrification, irrigation facilities, rural transport, storage structures and warehousing facilities etc.; while social infrastructure includes primary
health centres, schools, anganwadi centres, safe drinking water and sanitation facilities, building of community centres etc.

Now the next obvious question will be... what is ‘rural infrastructure’? ...In a very simple way, ‘Rural infrastructure’ may be defined as those wide ranges of public facilities or infrastructural arrangements designed exclusively for the betterment of rural life and initiated mostly by the Government and made available within rural areas. For example, provisioning of all-weather road connectivity to rural areas, electricity distribution facilities, and telecommunication networks will act as a catalytic intervention for the rural population by ensuring their access to a vast range of economically gainful activities, regulated and fair market, health, education and other public services; availability of warehouses and godowns in rural areas can ameliorate food security concerns; irrigation facilities can boost up agricultural productivity, reduce vulnerability to drought, and stabilize yields. Thus, a concerted effort towards building rural infrastructure, to a great extent, can bridge the rural-urban development gap by accelerating the growth of rural economy.

It is generally argued that rural infrastructure basically comprises of rural roads, rural housing and rural electrification while urban infrastructure primarily includes urban residence, roads, business premises, recreational facilities, sewerage, communication facilities, railways, airport etc. But sadly studies across the nation have always pointed out the weak infrastructural-base as one of the key factors for sluggish growth of the rural India; rural countryside is still dotted with decaying bridges, potholed roads, crumbling buildings, electricity lines that carry no power, and dry water supply schemes. But fortunately, the Tenth Five Year Plan identified feeble rural infrastructure to be a major impediment for sustainable growth of the nation and envisaged development of credible public-private partnership (PPP) models with adequate financial back-up. Following the same trend, the Eleventh Five Plan also thoroughly emphasized on boosting up the infrastructures of rural India with increased allocation of resources and encouraging a wide range of PPP initiatives. During last few years, with the realisation that ensuring a double digit growth of the country’s economy will be a tricky task – a number of ambitious investment plans for strengthening the base of rural infrastructure have been designed and this fact becomes much more apparent when we look into the financial allocation under Twelfth Five Year Plan where a cumulative amount of around $1 trillion has exclusively been earmarked for infrastructure-development with a special focus on connecting remote and rural parts of India through roads and rails; as per the plan, nearly 50% of this stipulated amount will be utilised for undertaking construction projects.

For providing a concerted effort towards strengthening the base of rural infrastructure, a time-bound comprehensive plan called ‘Bharat Nirman’ was initiated in 2005, with its six major areas intervention like (1) improving rural housing (2) boosting irrigation (3) developing road-connectivity in villages (4) strengthening rural water supply (5) promoting rural electrification and (6) expanding rural telecommunication connectivity. Currently, quite a few number of Centrally Sponsored schemes and programs are in operation to achieve the overall goal of ‘Bharat Nirman’. Indira Awaas Yojana (IAY) aims at provisioning free houses for Scheduled Castes (SC)/ Scheduled Tribes (ST) population of rural areas and also to non SC/ST rural population living below poverty line. Introduced as a fully funded Centrally Sponsored Scheme on 25th December 2000, Pradhan Mantri Gram Sadak Yojana (PMGSY) targets to provide all weather road connectivity across rural parts of the nation. The Total Sanitation Campaign (TSC) was started in 1999; by adopting a participatory approach to promote rural sanitation, it has shown some amazing results in the last few years by encouraging the stakeholder-ships of Gram Panchayats in maintenance of sanitation and hygiene in villages.
Reflections of Some Recent Progress in Rural Infrastructure

- **Indira Awaas Yojana (IAY):** During 2009-10, against the physical target of 40.52 lakh houses - 21.18 lakh houses have been constructed till January 2010 and 27.53 lakh houses are under construction.

- **Pradhan Mantri Gram Sadak Yojana (PMGSY):** Till December 2009, a total of 33,812 habitations have been connected by constructing 97,583 km. rural roads; in addition, 1,84,353 km. existing rural roads have been upgraded.

- **National Rural Drinking Water Programme (NRDWP):** Against the target of covering 586 ‘not covered’, 1.23 lakh ‘slipped back’ and 34,595 ‘quality affected’ habitations ...253 ‘not covered’ and 1.18 lakh ‘slipped back’ habitations were covered and 32,129 ‘quality affected’ habitations were addressed during the year 2009-10 by NRDWP and about 4,500 rural schools have reportedly been provided with drinking water facilities.

- **Total Sanitation Campaign (TSC):** For coverage under TSC, projects in 606 districts of different States in the country have been sanctioned during 2009-10. The campaign has been successful in the construction of 125.2 lakh individual household latrines and 1.44 lakh school toilets.

- **Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY):** For the year 2009-10, RGGVY set a target to electrify 17,500 un-electrified villages and 47 lakh Below Poverty Line (BPL) Households against which 18,374 villages and 47.18 lakh Households were provided access to electricity.

- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):** During financial year 2009-10, 36.51 lakhs works were undertaken, of which 51% constituted water conservation, 16% rural connectivity, 14% land development and provision of irrigation facility to individual beneficiaries constituted around 17%.

**Source:** Annual Report 2009-10, Ministry of Rural Development; Govt of India & Annual Report to the People on Infrastructure 2009-10; Planning Commission; Govt of India

Rajiv Gandhi National Drinking Water Mission (RGNDWM) adopts an integrated approach to provide sustainable supply of safe drinking water to the rural population. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) was launched in April 2005 for accelerating the process of rural electrification in the country. Rural Infrastructure Development Fund (RIDF) – a NABARD assisted initiative, is also playing an imperative role in linking rural villages by providing road-connectivity across rural India. As a result of the telecom penetration which has been evident across villages in recent years, rural tele-density has increased from 2006’s figure of 2 per cent to 33.79 per cent as of March 2011; statistics also shows that the number of rural wireless subscriber has drastically grown up to 282.23 million as of March 2011, from March 2010’s figure of 200 million. As far as facilitating irrigation is concerned, till 2009 - 6.5 million hectares of rural land has been brought under assured irrigation and it has also been planned to cover the remaining 3.5 million hectares by 2012. Last but not the least, the Mahatma Gandhi National Rural Employment Guarantee Act, aiming at ensuring 100 days’ guaranteed employment for every rural household in a financial year – has put a major emphasis on creation of durable community assets as well as social and economic infrastructure in rural areas. Since its inception, in September 2005, the program has been instrumental in enhancement of rural livelihood opportunities on a sustained basis, by developing need-based rural infrastructures.

Infrastructure development has gradually been well recognised as one of the key elements of India’s rural development strategies for transforming the low productive rural economy into a fast-growing agro-industrial one, with the realization that high transactions costs arising from inadequate and inefficient infrastructure can prevent the economy from realizing its growth-potential at its best inspite of the progress on other fronts. So, now the basic question arises ...how
far these infrastructure development initiatives have percolated into the process of rural poverty eradication ...or... whether the fore-mentioned statistics truly reflect the grassroot realities of rural infrastructure... Research conducted by different development experts or organisations or research institutes explore that despite a wide array of public facilities and rural development measures - the absolute number of rural residents living below the poverty line has not declined substantially; abject poverty still remains ubiquitous across rural India. Lack of adequate infrastructure continues to remain a major constraint for sustainable growth across millions of Indian villages; and for this, we cannot squarely blame our Government also because limitations on availability of financial and other resources for rural infrastructure development makes it impossible to ensure basic infrastructural facilities for every village; and even if it is ensured, it will not be commercially sustainable.

So, keeping in view the current rural dynamics, it may be suggested that though the popularly known ‘3P’ model i.e. Public Private Partnerships (PPPs) is a preferred mode for operationalisation of infrastructure projects but for rural India, the need of the hour is to adopt an extended ‘4P’ framework i.e. ‘People-Private-Public Partnerships’, as people’s participation or community stakeholdership proves to be the key to success for any development project. Sometimes it is argued that provisioning of rural infrastructure suffers more acutely from governance inadequacy than technology or funds - so comprehensive regulatory framework for controlling corruption like Lokpal needs to be introduced on urgent basis to get rid of the vicious cycle of corruption and simultaneously suitable monitoring mechanism for tracking the progress of different infrastructure development initiatives needs to be developed and promoted which ultimately, at the end of the day, will be instrumental in achieving the desired goal in a time-bound manner. Finally, while concluding I must say that an efficient and transparent Panchayat system with sufficiently trained manpower backed by adequate financial resources, needs to be established as it is considered to be the nodal institution for executing any developmental initiative in rural India.

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It is recognised that there is a virtuous cycle inter-connecting the expansion of farm economic activity and that of rural non-farm income opportunities.

Rural infrastructure for a country like ours with its predominant peasantry composition is too important to be ignored. India today may be cruising on a knowledge economy with services sector accounting for close to 60 per cent and manufacturing another 15 per cent of the gross domestic product (GDP). But the reality as is borne out in the Census of 2011 reveals that 68.2 per cent of our population or 833 million people are living in rural India. A very large proportion of them are either wholly or significantly dependant on their livelihoods on farm activity—be it crop agriculture, horticulture, animal husbandry or fisheries. Successive plans of the Government have recognised the fact that the expansion of income opportunities in the farm sector and a progressive absorption into non-agricultural activity is the most potent weapon for reducing poverty in this segment of the population. Expansion of non-farm income opportunity in rural areas has also enormous potential with a great deal of this pertaining to farm activity—such as post-harvest operations, maintenance of farm equipment. It is recognised that there is a virtuous cycle inter-connecting the expansion of farm economic activity and that of rural non-farm income opportunities.
The Economic Survey of the Ministry of Finance 2011-12 presented in February this year prior to the presentation of the Union Budget in Parliament asserted that the Government of India has been laying the due stress on building up rural infrastructure over the years. The objectives for this include the need to facilitate higher degree of rural-urban integration and for scoring an even and balanced pattern of growth and opportunities for the poor and vulnerable segments of society. Over the years, the Government has put in place a slew of strategies and programmes to realize these objectives. Foremost among them is the Bharat Nirman, launched in 2005-06 for building infrastructure and basic amenities in rural areas. It has six components viz., rural housing, irrigation potential, drinking water, rural roads, electrification and rural telephony.

Accordingly, scalable milestones have been set to provide connectivity to all villages with a population of 1000 (500 in hilly/tribal areas) with all-weather roads. New connectivity is proposed to a total of 63,490 habitations under Bharat Nirman, involving construction of 189,897 km of rural roads. Besides, this flagship programme also envisages upgradation/renewal of 194,130 km of existing rural roads. Under Bharat Nirman, as much as 42,249 habitations have been provided all-weather road connectivity upto end-December 2011 and projects for connecting 16,126 habitations are at different stages of implementation.

**Indira Awas Yojana**

The Indira Awas Yojana (IAY) is one of the six components of the Bharat Nirman Programme. In the last fiscal year 2011-12, against the physical target of 27.26 lakh houses, 21.18 lakh houses were sanctioned and 7.26 lakh constructed as on end-October 2011. The unit assistance provided to rural below-poverty-line (BPL) households for construction of a dwelling unit under the IAY has also been recently revised and construction of IAY houses being brought under the differential rate of interest scheme. The idea is to provide affordable and bearable interest by the indigent population. The higher unit assistance to individual household is prompted mostly to address the major weakness of the scheme which has been the quality of housing as complaints were galore about weak foundations, poor roofing materials and incomplete constructions.

The Planning Commission in its Approach Paper to the 12th Five Year Plan (2012-17) pointed out that the Eleventh Plan (2007-2012) witnessed an unprecedented injection of resources from the Union Budget to the rural and farm sector. This thrust formed the substance of the Bharat Nirman programme. Moreover, the much-touted Mahatma Gandhi National Employment Guarantee Act has provided a major bedrock and enduring legacy to the rural economy. Over the past five years, MGNREGA has provided nearly 9000 million persons days of work at a total expenditure of more than Rs 1,10,000 crore. MGNREGA turned out to be highly inclusive, as is evident from the fact that the share of Scheduled Caste/Scheduled Tribe families among the beneficiaries has ranged between 51-56 per cent with 41-50 per cent of workers being women. It has also promoted financial inclusion since over 100 million bank/post office accounts have been opened for the poorest segments of population who comprise of the MNREGA workforce. This has also vastly reduced their reliance on money-lenders and other informal loan sharks who exploited them implacably and with immunity over the years.

**Rural Drinking Water**

Again, the coverage of rural settlements under the National Rural Drinking Water Programme (NRDWP) has revealed an impressive rise, with now almost universal coverage being bruited. Dramatic improvement has also been witnessed in sanitation. The aim of the NRDWP is to provide every rural person with adequate safe water for drinking, cooking and other fundamental domestic needs on a sustainable basis with a minimum guaranteed water quality standard. Under the NRDWP, 20 per cent of
the allocation to States is earmarked for taking up work for sustainability of sources and systems. This fund is being extended to States as 100 per cent grant in order to enable the States to ensure enduring gains to the poor in the provision of potable water. Besides, the sustainability measures were put in place to bolster drinking water sources to achieve long-term sustainability.

With 73rd Amendment to the Constitution of India and rural water supply having been placed in the Eleventh Schedule of the Constitution as one of the twenty-nine subjects, it may be devolved to the Panchayat Raj Institutions (PRIs). The Department of Drinking Water & Sanitation has laid accent on demand-driven, decentralised, community-managed rural water supply system. Interestingly, it is noted that 10 per cent of the NRDWP allocation is given to those States as incentives that have handed over the management of water supply schemes to PRIs/local bodies. The Union Minister of Rural Development, Drinking Water & Sanitation assured the Lok Sabha in August 9, 2012 that under the NRDWP during the 12th Plan it is proposed to lay emphasis on piped water supply in rural habitations as a next logical corollary to conferring salutary benefits to the deprived sections.

Similarly efforts are also on to ensure total sanitation in the rural areas as the aggregate funds provided under the annual budget of the Central government has gone up from Rs 1200 crore in 2009-10 to a massive Rs 3500 crore in 2012-13 under this head in the inaugural year of the 12th Plan. The Total Sanitation Campaign (TSC), spearheaded by the Union Government, has been renamed as Nirmal Bharat Abhiyan (NBA) and is a demand- driven and project-based programme. As such, there are no annual allocations made to the States as the funds are released to the States as per their eligibility and utilisation is reported by the States through the online data monitoring system maintained by the Ministry at the Centre.

**National Rural Livelihood Mission**

Any genuine study of rural infrastructure would be incomplete without adequate reference to the National Rural Livelihood Mission (NRLM) launched in 2011. The mission rightly took a cue from the lessons of the Swarnajayanti Gram Swarojgar Yojana (SGSY). There is a clear understanding from the beginning that Self-Help Group(SHG)-Bank Linkage(SBL) programme could only be successful if it is tied up with livelihood programmes such as improved agriculture, dairying and marketing. Thus, the SBL and livelihood programmes are complementary to each other and their simultaneous implementation is the key to poverty alleviation over the medium to long haul. Incomes generated through livelihood initiatives need to be saved. Of these savings women are recognised as the best custodians. These savings should in turn be ploughed back in livelihood options that further push incomes, setting up a virtuous cycle. Hence the distinctive focus of the NRLM is on Federations of SHGs that become puissant units of economic empowerment, enabling the poor to radically alter the balance of power in the markets they participate in as both producers and consumers, the 12th Plan Approach Document has so spelt out in a pithy way.

Considering the fact that the flagship programmes of the Ministry of Rural Development include MGNREGA, IAY and PMGSY, it is gratifying to note that the performance of most of the States in these programmes was found to be satisfactory during the last three years, as conceded by the Minister of State in the Ministry of Rural Development Mr. Pradeep Jain ‘Aditya’ in a written response to a query in the Lok Sabha on August 9, 2012. However, in order to improve the effective implementation of programmes, the Ministry has advised the State governments to follow a five-pronged strategy encompassing creation of awareness about the rural development programmes, people’s participation, transparency, social audit and monitoring of rural development programmes at all levels. In sum, as real India resides in the rural areas distinctly recognized as Bharat, both the governments at the Centre and States and at local levels, efforts are continuously and comprehensively being made to make a qualitative difference to the dreary life of legions of rural people so that they take part ardently in the arduous task of nation-building with will and might.

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World Bank study [1997] estimated that 15% of the agricultural produce is lost between the farm gate and the consumer because of poor roads and inappropriate storage facilities alone, adversely influencing the income of farmers.

With the planned efforts of the Government in recent years thousands of kilometers of highways between major cities criss-cross India. However, over 40% of country’s population and about half of the country’s habitations still remain unconnected with rural roads.

According to the Planning Commission’s Working Group on Rural Roads for the Eleventh Plan [2007-12] there were over 3,30,000 habitations with no road connections. Connecting villages and small towns with the main roads will help farmers transport their products to markets, men and women seek jobs and children go to schools and hospitals.

Across India, many communities have no direct link to nearby towns and villages or at best use seasonal or katcharoads that are often washed out or destroyed during the rainy season. In most States, such roads are unusable for 90 days a year. This has held back development in large swathes of the countryside. Rural road connectivity as a
component of rural infrastructure needs to be accorded priority in the Twelfth Plan in order to realize country’s unfathomable economic growth potential. This paper attempts to highlight the significance of rural road connectivity in the light of empirical research and reviews the progress under the Pradhan Mantri Gram Sadak Yojana and Bharat Nirman Program and suggests to accelerate the performance.

Studies: World Bank study [1997] has estimated that 15% of the agricultural produce is lost between the farm gate and the consumer because of poor roads and inappropriate storage facilities alone, adversely influencing the income of farmers. Poor rural road infrastructure limits the ability of the traders to travel to and communicate with remote farming areas, limiting market access from these areas and eliminating competition for their produce. Easier access to market allows expansion of perishable and transport-cost intensive products. International Fund for Agricultural Development [1995] observed that construction of rural roads almost inevitably leads to increase in agricultural production and productivity by bringing in new land into cultivation, intensifying existing land use to take advantage of expanded market opportunities. Better roads also lowered the transaction costs of credit services, resulting in increased lending to farmers, higher demand for agricultural inputs and higher crop yields. There was a direct relationship between increase in acreage of export crop cultivation and the standard of roads and distance from the main commercial centers. There is enhanced entrepreneurship activity, sharp decline in freight and passenger charges and improved services as a result of investment in rural roads [Bonney, 1964]. Binswanger et al. [1987] using annual data for 58 countries reported a positive and significant correlation between road development and aggregate crop output.

In a study using macro data from 85 random selected districts in India to examine the role of rural roads, among other factors in agriculture investment and output, it was found that the road investment contributed directly to the growth of agricultural output, increased use of fertilizer, expansion of commercial banking operations, etc. [Binswanger et al, 1993]. The study of six rural road projects in North and South 24 Parganas districts of West Bengal to assess the impact of roads on the living conditions of the benefited villagers showed that widening and strengthening of roads resulted in saving on vehicle operating costs, shift in mode of transport, increase in the frequency of travel, increase in the job availability of skilled and unskilled laborers in the nearby towns. The field studies in four States of Gujarat, Punjab, Rajasthan and Tamil Nadu with an overall objective of evaluating the impact of rural roads financed under RIDF on the actual cost of investment, changes in terms of economic benefits in terms of income and employment in the benefited villages in farm and non-farm activities showed that investment in rural roads is economically viable with a positive net present value in all the States. The economic rate of return [ERR] of the investment calculated on discounted cash flow technique ranged between 20.3% in case of Tamil Nadu to 36.8% in case of Gujarat with an overall ERR at 26.1%. Net benefit per km of road was in the range of Rs.2,08,000 in Gujarat and Rs.2,87,000 in Tamil Nadu per year at reference year’s price. Employment generation was uneven not only across the States but also across the sub-sectors, depending upon the level of investment, potential available, availability of linkages etc. The percentage of man-days employment increase ranged from 35 in Punjab to 8 in Rajasthan.

The World Bank study reveals that the retail prices of low value/bulk commodities are generally 10% higher in unconnected villages than in those
with road access. The most important benefit, however, relates to poverty reduction. A 2007 study by the International Food Policy Research Institute, Washington found that investing in roads had the greatest impact on reducing rural poverty, performing consistently better than investments in agricultural research and development, and education.

**Prime Minister’s Gram Sadak Yojana**

The PMGSY acknowledged the facts that [i] Notwithstanding the efforts made over the years at the State and Central levels, through different programs, as on 31st March 2000, around 40% of the Habitations in the country were not connected by all-weather roads. [ii] And even where connectivity was provided the roads constructed were of such quality [due to poor construction or maintenance] that they could not always be categorized as all-weather roads.[iii] States with poor connectivity are also States that reflect poor socio-economic indices.[iv] A nation-wide network of All-weather roads in the rural areas is a critical link for progress. Rural road connectivity is not only a key component of rural development by promoting access to economic and social services and thereby generating increased agricultural incomes and productive employment opportunities in India, but is also a key ingredient in ensuring sustainable poverty reduction.

With a view to redressing the situation Government launched on 25th December 2000 PMGSY to provide All-weather access to unconnected Habitations. The PMGSY was launched to provide single all-weather road connectivity to eligible unconnected habitations having population of 500 persons and above in plain areas and 250 persons and above in hill states, tribal areas, desert (as identified in the Desert Development Program) areas, and LWE-affected districts as identified by the Ministry of Home Affairs. The PMGSY aimed at providing connectivity by way of an All-weather road [with necessary culverts and cross drainage structures, which is operable throughout the year] to the eligible unconnected Habitations in the rural areas in such a way that all unconnected Habitations with a population of 1000 persons and above can be covered in three years [2000-03] and all unconnected Habitations with a population between 500 and 1000 persons by the end of the 10th Plan period [2007]. In respect of the Hill States [North-East, Sikkim, Himachal Pradesh, J&K, Uttarakhand] and the Desert areas [as identified in the Desert Development program] as well as the Tribal areas, the objective has been to connect Habitations with a population of 250 persons and above. Under the PMGSY approximately 1,60,000 habitations are expected to be covered with an anticipated investment of Rs.600 billion. The program is entirely funded by the Government of India. The Union Government formulates the policy guidelines, which emphasizes construction of good quality roads through better planning, timely securing approval for road construction, transparent methods of execution, time bound implementation and quality control. The States are responsible for planning and execution of the work and monitoring of implementation.

The Eleventh Plan projected an investment requirement of Rs.413.47 billion [at 2006-07 prices] for rural roads. During the first three years of the Plan period, the flow of expenditure under the PMGSY seems to meet the Plan target.

Up to January 2012, about 4.41 lakh km roads to benefit 1,14,433 habitations have been cleared with an estimated cost of Rs 1, 26,937 crore. A sum of Rs 96,952 crore has been released to the states/union territories and about Rs.88,931 crore has been spent. So far, 3,41,257 km road length has been completed and new connectivity has been provided to over 82,019 habitations. Work on a road length of about 98,399 km is in progress. So far, 79,938 habitations, almost 73% of the sanctioned habitations have been provided all-weather road connectivity till September 2011.

**Bharat Nirman:** The PMGSY, which has since 2005-06 been a part of Bharat Nirman Program aimed at improving rural road infrastructure between 2005 and 2009. It initially proposed to
give road connection to 66,802 eligible habitations but subsequently scaled down the target to 59,536 habitations. The achievements, however, have fallen short of the target, with the coverage limited to 35% up to 2008. The second component of the plan, which is to upgrade 190,000 kilometers of rural roads, also fell short of the target. As financial resources are a major constraint, the Planning Commission’s suggestion to look for alternative financing models, including a public-private-partnership at the local level, for instance, with sugar mills, merits serious consideration. However, the Government should continue to play the lead role in improving rural connectivity, which is vital for the economic and social inclusion of a significant part of rural India. Up to December 2009, 33,812 habitations have been provided all-weather road connectivity of a total length of 214,281.45 km. Proposals for connecting 53,523 habitations have been cleared up to September 2011. So far 42,531 habitations have been provided all-weather road connectivity up to January 2012 and projects for connecting 15,856 habitations are at different stages. During April 2011 to January 2012 over 15,566 km all-weather roads have been completed under the program. This has provided connectivity to 2,579 habitations at an expenditure of Rs.8,380 crore.

All States through loans on soft terms from commercial banks under the Rural Infrastructure Development Fund have constructed rural roads of 3,30,855 km and rural bridges of 6,67,306 meters as on March 31, 2011.

Support by ADB: Since 2000, under the PMGSY rural roads of 1,09,000 km in five States Assam, Chhatisgarh, Madhya Pradesh, Orissa and West Bengal have been built connecting nearly 40,000 communities to bigger transport hubs. Plans are on to construct 32,000 km more. The investment of $ 1.2 billion by the Government is supported by Asian Development Bank loan of $800 million to connect 4,200 far-flung communities to crucial markets and services with 9,000 km of all-weather rural roads in these five States by the end of 2017. The ADB loan will also be used to improve road planning and maintenance; upgrade road design and safety; and build the skills of engineers, site supervisors and technicians. This would be done by setting up and supporting the roll out of six Rural Road Network Management units and one Rural Connecting Training and Research Center in each State.

Twelfth Plan and Rural Infrastructure Commission should be appointed to deal with all critical issues of rural infrastructure & formulate a road map to complete the development by 2020. Rural Infrastructure Development Company may be incorporated to plan, implement and mobilize financial resources from within the country as well as from the World Bank, ADB and attracting Foreign Direct Investment, Foreign Institutional Investors. Rural households should voice their concern and demand from their elected representatives to provide rural infrastructure in villages within a time-frame. Elected members of State Legislative Assemblies, Members of Parliament and RajyaSabha can consider spending for rural infrastructure out of their annual fund allocated for local area development. Electronic and print Media can consider bringing out inadequacies of rural infrastructure district-wise in local language and mount campaign to accomplish them.

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The need for development of the rural road network is imperative for balanced growth and development of the country. However, only in the last decade, the government began to focus on rural roads development by launching some programmes, specially the Pradhan Mantri Gram Sadak Yojana (PMGSY) launched in 2000. Apart from this, the Bharat Nirman introduced in 2003 had rural roads construction as an important component which has been blended with PMGSY programme. In fact, in the past 8 years, 1.25 lakh km per year was added to India’s road network.

India has a road network of over 4.42 million kilometers (2.059 million miles) of roadway, making it the second largest road network in the world. At 0.66 km of highway per square kilometer of land the density of India’s highway network is slightly higher than that of the United States (0.65) and far higher than that of China’s (0.16) or Brazil’s (0.20). As of 2002, only 47.3% of the network consisted of paved roads.

As of November 2011, India had completed and placed in use over 14,500 kilometers of recently
built 4-lane highways connecting many of its major manufacturing centers, commercial and cultural centres. Also up to March 2012, the total length of roads stands at 47 lakh km against 37.2 lakh km in 2004, recording a major growth in the rural roads category, according to a recent report. The percentage of surfaced roads – both concrete and bituminous – increased significantly from 49 per cent in 2008 to 54 per cent in 2012. Moreover national highways increased from 70,000 km in 2008 to 76,818 km in 2012.

Earlier a parliamentary panel was critical of National Highways Authority of India (NHAI) as the pace of construction dwindled from 13.72 km per day in 2009-10 to 10.15 km in 2011-12, hinting at inadequate planning and improper execution. In a report tabled in Lok Sabha (on May 7), the panel noted that the Golden Quadrilateral and the North, South and East, West corridors have also not been completed till date.

Way back in a 2010 report, KPMG - one of the world’s largest audit and advisory services company - noted marked improvements in Indian road network and logistics efficiencies in recent years. The report also identified the competitive challenges faced by India. Some findings of this report include the following:

- The average road speed in India increased to 30-40 kilometres per hour compared with the world average road speed, which includes China, ranges between 60-80 km. per hour;
- Four lane road network increased to 7000 km while China in comparison has 34,000 km of equivalent quality roads;
- Average surface freight costs dropped to US $0.07 per km while in Japan surface freight costs are US $ 0.037.

The KPMG report also noted that India’s road network logistics and transportation bottlenecks hinder its GDP growth by one to two percent (US$16 billion - US$32 billion). In India’s 2010 per capita income basis, this is equivalent to a loss of about 10 million new jobs every year. Poor rural roads and traffic congestion inside the cities remains a big challenge for the country. The planned addition of over 12,000 kilometers of expressways in the next 10 years may help address some of such issues.

As per the report of the Working Group on Rural Roads (WGRR) of the 12th Plan (2012-17), in order to achieve the targets of PMGSY, Rs 84,721 crores was released by March 2011 against the sanctioned project sum of Rs 119,000 crores. Funds required for yet to be sanctioned projects were estimated at over Rs 185,000 crores which include left out new habitations, missing bridges, repayment of NABARD loans, launching of PMGSY-II etc. according to ministry sources, the total funding requirement during the 12th Plan is estimated to be over Rs 219,000 crores but resource constraints may become a stumbling block in releasing such huge money for roads development.

Funding construction of rural road projects, under PMGSY and other schemes faces hurdles despite the support being provided by the World Bank and the Asian Development Bank. WGRR recommended several options like improving cess on petrol prices, exploring the probability of public private partnership (PPP), asking the states to allocate some share out of agriculture mandi tax, mining royalty, road tax on vehicles etc. A proposal to ask the states to bear 50 per cent – 20 per cent for hilly areas – of project cost in PMSGY-II is being considered.

In fact, fund shortage resulted in 60 per cent work having been completed so far. The PMGSY programme, which should have ended in 2007, would now take till 2017, according to Rural Development Ministry sources. A total of Rs 40,000 crores would be required every year for completion of all balance PMGSY projects but government finance is only for around half the amount.

The Rural Roads Development Vision Plan (RRDPV)2025 (formulated in 2007), in its broad assessment of the physical and financial requirements for roads, found that investments in construction, upgrading and maintenance would need to increase from the current level of Rs 11,000 crores per annum to Rs 29,000 crores per annum by the 14th Plan (2022-27). The Vision document stated that the proposed current investment is a mere 0.9 per cent of the GDP and therefore should be considered modest and realistic.

RRDPV observed that 80 per cent of rural roads are in a poor condition due to a combination of factors including poor quality construction though it has shown some improvement with PMSGY projects.
The Rural Roads Development Agency established to coordinate and monitor PMSGY has set up a three-tier quality control mechanism with the state governments responsible for the first two. However, in majority of the other rural road projects executed in other schemes do not have rigid quality control schemes, the result being standards are lacking technically.

**Budget Allocation**

Keeping in view the needs of intensifying connectivity, the current budget increased allocation of the road ministry by 14 per cent to Rs 25,360 crores in 2012-13. The ministry is set to achieve a record target of awarding projects covering a length of 7300 km under the National Highway Development Programme (NHDP) during 2011-12. This would be 44 per cent higher than the best ever length of 5032 km awarded in 2010-11. In 2012-13, the Finance Minister stated that the ministry was setting a target of covering a length of 8800 km and even 85-90 per cent is accomplished, this would indeed be commendable.

Coming to maintenance, this happens to be big problem though some states like UP and Karnataka have set up dedicated funds in this regard. But there is a wide gap between need and availability. There is still necessity to extend maintenance period to ten years so that states can get time to raise adequate funds for the purpose.

At a time when there is lot of talk of tackling rural poverty effectively, it goes without saying that as rural connectivity improves, the livelihood situation and overall development of the rural sector is bound to improve significantly. Facilitating movement of men and materials through different modes of transport, mainly surface transport would change the fact of Indian villages. Farmers would find it easier to take their products to the market in time, thereby increasing their earnings, school/college enrolments and attendance would go up, families would have better access to health care and have better opportunities for life and living.

In the coming fiscal, the strategy seems to be slightly different. Most of the projects awarded by the National Highways Authority of India were on PPP but henceforth it is has been decided to award construction orders worth Rs 15,000 crores on EPC (Engineering Procurement & Construction)

Land, however, is a big problem and it is understood that states like Maharashtra, West Bengal and Kerala have witnessed in land acquisition. It may be mentioned that the opening of National Highway 35 connecting the Petrapole border to Kolkata as well as the rest of the country has been put on hold because of non availability of land. The Rs 300 crores project to convert the narrow 60 km artery that witness frequent traffic congestion into a four-lane highway has been stalled for over a year due to local resistance against land acquisition.

The Delhi-Mumbai Industrial Corridor (DMIC), however, has been moving from planning stage to implementation. The DMIC project covering 11 investment regions of more than 200 sq. km and 13 industrial areas is likely to redefine the character of growth. In the last financial year (2011-12) 7800 hectares of land was acquired until November compared with a total acquisition of 8533 hectares in 2010-11 and 6244 ha. in 2009-10. As per the budget speech of the Finance Minister, central assistance of Rs 18,500 crores was being made over five years in addition to $ 4.5 billion Japanese assistance.

According to recent estimates by Goldman Sachs, India will need to invest US$1.7 trillion on infrastructure projects over the next decade to boost economic growth. And of this, roads would obviously be an important component. In an effort to accomplish this, the government is planning to promote foreign investment in road projects by offering financial incentives such as toll rights to developers.

Thus the increase of rural roads is imperative for the growth and development of the country and its people. The benefits may be summarized as below:

- Poverty alleviation
- improvement in the quality of life through better opportunities;
- improvement in the capacity of work;
- removal of isolation;
- linkages to economic activities, health and educational institutions;
- agricultural development and diversification which include timely supply of input, crop diversification, increase in production, and proper marketing; and
- faster development of rural industrialization.

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Infrastructure assets are the physical structures and networks used to provide essential services to a society. These tangible assets, and the business set up to manage them, can be viewed as the backbone of an economy. Broadly speaking, infrastructure can be split into two categories; physical, such as transport, utilities and communications, which can be provided efficiently by private agents, and social, which consists of assets and services like health, sanitation, drinking water, housing and education. Housing is a vital social infrastructure for any society. Rural housing is an important element of rural development. Rural housing is one of the six components of Bharat Nirman Programme.

The vision enshrined in the concept of providing a roof to every rural poor, especially those who living below the poverty line. Shelter is a basic need of a citizen and is critical for determining the quality of human life. A roof over the head endows a shelter less person, with an essential asset and improves his physical and mental wellbeing. Hence, fulfilling the need for rural housing and tackling housing shortage particularly for the poorest is an important task to be undertaken as part of the poverty alleviation efforts of the government. The Government has chosen the path of fulfilling the housing requirement of economically weaker sections and low income groups through Indira Awas Yojana (IAY). Indira Awas Yojana (IAY) house is
a pucca one with permanent walls and permanent roofing. The Indira Awas Yojana (IAY) is a flagship Scheme of the Ministry of Rural Development to provide houses to below the poverty line (BPL) families in the rural areas. It has been in operation since 1985-86. Actually the genesis of Indira Awas Yojana (IAY) can be traced to the programmers’ of rural employment which began early 1980s. Indira Awas Yojana continued as a sub-scheme of Jawhar Rozgar Yojana (JRY) to 1989. Indira Awas Yojana (IAY) had been delinked from Jawhar Rozgar Yojana (JRY) and had been made an independent scheme with effect from 1st January, 1996.

**Objectives of rural housing scheme**

The vision of rural housing is to promote sustainable and inclusive growth of rural India through multi–pronged strategy for eradication of poverty by increasing livelihood opportunities, providing social safety net and developing infrastructure for growth and improvement of quality in life of rural India. The Ministry has drafted a strategic vision document listing the following objectives: The objectives of Indira Awas Yojana are: (1) primarily to help constitution of dwelling units by members of SCs/STs, non – SCs/STs rural poor below the poverty line by providing them with grant in aid, (2) to empowered the rural women, (3) to empower the Physically Challenged Persons in rural areas, (4) to empower the rural minorities.

**Funding Pattern of rural housing**

Indira Awas Yojana (IAY) operates as a 100% subsidized centrally sponsored programme with the resources being shared on 75:25 basis between centre and the states. In case of North East States, the funding ratio between the centre and states is 90:10 respectively. For union Territories (UTs), entire funds of Indira Awas Yojana (IAY) are provided by the centre. Funds under the scheme allocated to the states / union Territories are further distributed to the districts in proportion to the SC/ST, physically challenged, and minority population in the district.

The criteria for allocation of Indira Awas Yojana (IAY) funds to the states and Union Territories involves assigning 75% weightage to housing shortage and 25% weightage to SC/ST component. Further, 60% of the IAY allocation is meant for benefiting SC/ST families, 3% for physically challenged, and 15% for minorities. The financial assistance provided under Indira Awas Yojana (IAY) for construction of a new house has been revised time to time. The financial assistance for construction of new house was Rs.20, 000/-, Rs.35, 000/- and now it is Rs.45, 000/- in plain areas. On the other hand the financial assistance for the construction of a new house in hilly/difficult areas was Rs.22, 000/-, Rs.38, 500/-, now which amount is Rs.48, 500/-. The Reserve Bank of India has advice to include the Indira Awas Yojana (IAY) houses under the Differential Rate of Interest (DRI) scheme for lending up to Rs.20, 000/- per housing unit at interest rate of 4%. This was communicated to all the state governments through various communications and forum/meetings. It was brought to the ministry’s notice that the banks were applying the ceiling of annual income of Rs.18, 000/- p.a. as criterion for extending the DRI benefit to the IAY beneficiaries.

The funds should be released either in two or three installments. Ideally the funds should be distributed to the beneficiaries in two installments, first installment with the sanction order and the second installment when the construction reaches the lintel level.

**Selection of Beneficiaries**

The allotment of house under the scheme is done in the name of the female member of the beneficiary house hold alternatively; it can be allotted in the joint name of both the husband and wife. In case there is no eligible female member in the family, a house can be allotted to a male member of the family. Beneficiaries are selected in an open forum of local Self Government. Gram Sabha should have finalized the list of beneficiaries as an open forum of Panchayati Raj Institution.
in many states. Beneficiaries are selected in the meeting of Gram Sansad in West Bengal. Final list of beneficiaries is prepared by the Gram Panchayat out of the beneficiaries selected by the Gram Sansad on priority basis. Gram Panchayat shall display prominently the names of beneficiaries for wider dissemination of the information. Gram Panchayat shall display the list of beneficiary on the walls of panchayat Buildings. In addition Gram Panchayat also to printing the same in the form of booklets and also uploading it on the website. Such action has been insisted upon to ensure that beneficiaries are aware about there turn for receiving financial assistance under IAY. This will ensure by panchayat that middlemen do not take advantage of the ignorance of the targeted households. So Panchayati Raj Institution is a soul authority for the implementation of Indira Awas Yojana (IAY) scheme. It is impossible to implement without the direct help of Panchayati Raj Institution.

To ensure transparency in the process of selection of beneficiaries to get financial assistance for construction of a house under Indira Awas Yojana (IAY), every Gram Sabha, Gram Sansad in the case of West Bengal should have finalized permanent Indira Awas Waitlists from BPL list 2002, in such a way that poorest of the poor is at the top. All the states / UTs have been instructed to paint the Permanent IAY waitlists on the walls of panchayat Building and also preserve and circulate among the beneficiaries and also the people, who living in respective areas and also uploading it on the website. As per information received from the states, Assam, Gujarat, Madhya Pradesh, Nagaland, Punjab, Rajasthan and Tamil Nadu have completed the preparation of the lists in all respects. Uttar Pradesh, Goa, Mizoram have finalized the waitlists. Other states like Bihar, Himachal Pradesh, Karnataka, Maharashtra, Manipur, Orissa, West Bengal etc. have not finalized the permanent IAY waitlists.

For the poorest of the poor who are landless and do not have house–sites, provision of homestead site is essential to enable them to fulfill their need for shelter and avail benefit under various government housing programmes. For this purpose, the government has approved a scheme as part of IAY for providing homestead sites to those rural BPL households whose names are included in the permanent IAY waitlists but do not have a house sites. Rs.10,000/- per homestead site will be provided under the scheme which will be shared by the centre and states in the ratio of 50:50. States like Karnataka, Kerala, Sikkim, Bihar, Rajasthan, Mizoram, and Maharashtra were to submit the proposals for this regards. Already funds have been released to Karnataka, Kerala, Rajasthan and Sikkim.

Other Basic amenities for beneficiaries

It is mandatory providing sanitary latrine in every house by dovetailing funds from total sanitation campaign (TSc), IAY scheme should also have convergence with DWS for providing drinking water, with Rajiv Gandhi Gramin Vidyutikaran Yojana for providing free electricity connection with insurance companies for ‘Janshree’ and beneficiaries should be encouraged to use clean fuel as well as kitchen gardens. Under RGGVY each IAY beneficiary can get a free electricity connection to his house, under TSC and IAY beneficiary who will construct a Sanitary Latrine will get an amount of Rs. 2200/- from TSc funds in addition to the unit assistance under IAY.

Supervision on rural housing scheme

The Ministry of Rural Development suggests some technical ways for supervision for transparency in rural housing scheme. These are:

a) The department suggest technical supervision shall be provided at least at the foundation and the roof lying stages, b) an effective complaint monitoring system with adequate staff should be set up at the state level which can visit, independent of the regular execution wing and give a report to the implementing agencies about the short coming, for effective redressal, c) system of social auditing of the scheme shall be introduced by the state government.
Coverage of beneficiaries

The state with less than 60% coverage of SC/ST beneficiaries in terms of houses constructed are Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. In terms of houses for the physically challenged persons as percentage of total houses constructed, Nagaland, Sikkim and Tamil Nadu have achieved the target of 3% or more.

The states which have constructed less than 1% houses for them are Chhattisgarh, Gujarat, Haryana, Jammu & Kashmir, Maharashtra, Orissa, Punjab, Tripura, Uttar Pradesh and Uttarakhand. Goa has not constructed even a single house for physically challenged persons.

The states which have sanctioned more than 60% houses in the name of women beneficiaries are Andhra Pradesh, Bihar, Goa, Gujarat, Karnataka, Kerala, Rajasthan, Tamil Nadu, Uttarakhand, and Lakshadweep. States with less than 40% coverage of housing for women are Arunachal Pradesh, Chhattisgarh, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Tripura and West Bengal. During the 2009-2010, against the physical target of 6.07 lakh houses, 5.10 lakh houses has been sanctioned for minorities so far. The states with more than 100% coverage for minorities are Haryana (109.21%), Jharkhand (103.57%), Karnataka (136.82%), Tamil Nadu (115.95%), Uttarakhand (102.25%) and West Bengal (162.70%). The states with more than 80% and less than 100% coverage for minorities are Andhra Pradesh (89.29%), Assam (67.98%), Bihar (91.30%) and Sikkim (82.05%). The states with more than 60% and less than 80% coverage of minorities are Kerala (72.62%), Maharashtra (67.74%) and Rajasthan (79.95%). The states with more than 40% and less than 60% coverage of minorities are Madhya Pradesh (46.40%), Orissa (46.56%), Tripura (45.77%) and Uttar Pradesh (57.89%). The states less than 40% coverage of minorities are C'garh (23.22%), Goa (24.71%), Gujarat (38.93%), Himachal Pradesh (25.65%), Jammu & Kashmir (6.51%), Manipur (15.54%), Meghalaya (2.64%) and Punjab (14.97%). The states no coverage of minorities are Arunachal Pradesh, Mizoram, Nagaland and all UTs.

Conclusion

The vision of rural housing division is to promote sustainable and inclusive growth of Rural India through multi-pronged strategy for eradication of poverty by increasing livelihood opportunities, providing social safety net and developing infrastructure for growth and improvement of quality in life of rural India. The provision of shelter and hence the roof to every rural poor has been and will continue to be a major component of the poverty alleviation measures of the Government in times to come. Consequently the Ministry of Rural Development has hiked its target to double the construction of houses for the rural poor from 60 lakh to 1.20 crore housing units during the period of 2009-12. For these Govt. of India and also the state Govt. to take initiative for the equal performance for the implementation of this scheme. Performance of IAY is increased day to day by the help of Panchayati Raj Institution. Govt. taken various programmes for the betterment most of this scheme. Some supportive schemes are, Homestead sites scheme, Drinking water scheme for drinking water, to full sanctioned programme, Rajiv Gandhi Gramin Vidyut Karyana, Aam Admi Bima etc. So in conclusion it is strongly right to say that it is possible to provide a roof of every rural poor in near future.

Indira Awas Yojana (IAY) operates as a 100% subsidized centrally sponsored programme with the resources being shared on 75:25 basis between centre and the states.

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Connectivity and mobility is the key to reach out to remote rural communities and open up new opportunities for development. With the road network, rural economy and quality of life has improved significantly. All weather roads are required for effective service delivery be it healthcare or education, skill development or livelihood. Under the ‘Bharat Nirman’ initiative, Pradhan Mantri Gram Sadak Yojana (PMGSY) is augmented with the objective of connecting the villages and towns with highways. The present article, outcome of an evaluation research, appraises implementation of Pradhan Mantri Gram Sadak Yojana in five districts of Odisha where naxal activities have mounted sharply. These districts are – Deogarh, Gajapati, Malkangiri, Rayagada and Sambalpur.

Before looking into the findings, a brief overview of socio-economic and cultural context of the study area would be relevant. Despite the state being endowed with richness of mineral-ores and natural resources, it has highest proportion of people living below poverty line. Planning Commission (2005) highlights that in Odisha 39.9% people are below poverty line as against the national average of 21.8%, which is highest in the country. A comparative analysis on poverty show that Scheduled Caste (SC) and Scheduled Tribe (ST) communities are poorer than others – over 64% ST and 39% SC are poor; 65% of the total poor in rural Odisha comprises of to ST/SC population (Economic Survey, Orissa: 2009-10).

District-wise comparison of Infrastructure Development Index (IDI) ranks Malkangiri at 27th...
place, Rayagada at 23rd, Deogarh at 20th, Gajapati at 19th and Sambalpur at 7th place among the 30 districts of Odisha (Economic Survey, Orissa: 2009-10). Geographical location of districts is of critical importance. Malkangiri, Rayagada and Gajapati are at the periphery of the state and surrounded by Andhra Pradesh. They are ranked among the lowest in infrastructure development indices. In this backdrop, performance of PMGSY in the state is looked into. Qualitative and quantitative data collected from the village inhabitants, panchayat members, NGO workers, Block, District and State level functionaries in the bureaucratic machinery explore the following details:

The extent of rural road connectivity in Orissa is far less than the requirement. Only 40% of all villages have all-weather connectivity as compared to the national average of 60%. By 31st May 2010, total 3850 roads out of sanctioned 7488 roads were completed with the length of 15999.20 Kms. (sanctioned length is 29289.41 Kms.). The cost incurred by this period is 5704.70 Crore out of the sanctioned cost of 9958.74 Crore on PMGSY.

District level data which are quite reflective from the following table, shows that in Malkangiri, the gap between sanctioned number of roads and actual roads constructed is the most while in Deogarh it is the least. Malkangiri is geographically at the periphery and contains dense forests and inaccessible habitations. It has become a hub of Maoists’ activities. This shows an inverse relationship between performance of PMGSY and naxal activities.

Village level data show that in Sambalpur district, out of ten villages, nearly eight do not have all-weather road. In Deogarh six villages lack such road connectivity. In Gajapati, the situation is worse as 98.5 percent villages are not covered under PMGSY. In Malkangiri, seven out of ten villages are not having all weather road connectivity. In Rayagada, four villages are covered under PMGSY and six remain uncovered. Respondents from the villages having all-weather road connectivity admit that their economic status and accessibility to social services have improved after road construction.

Geographical location is also critical for governments’ schemes reaching out to the poor. Respondents from NGOs claimed that historically, Cuttack, Bhubaneswar and nearby areas absorbed all the focus and resources for development and peripheral districts failed to get the required attention. Districts like Rayagada, Malkangiri are left out of the pail of development package offered by the government. Malkangiri, Rayagada, Gajapati, Deogarh, are bordering areas with Andhra Pradesh and Jharkhand so they were traditionally left out in the process of development. The chronic underdevelopment is reflected through naxalism in these areas. Added to this, the three districts i.e. Malkangiri [57.4% ST; 21.4% SC; total=78.8%]; Rayagada [55.76% ST; 13.92% SC; total=nearly 70%]; Gajapati [50.78% ST; 7.5% SC; total=58.28%] - are having more than 50 percent tribal population.

<table>
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<tr>
<th>District</th>
<th>Sanctioned</th>
<th>Achievement</th>
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<tr>
<td></td>
<td>No. of roads</td>
<td>Length (km)</td>
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<tr>
<td>Deogarh</td>
<td>40</td>
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<td>Gajapati</td>
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<td>Sambalpur</td>
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<td>656.73</td>
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Source: Secretariat, Government of Orissa, 2010
27th National Eye Donation Day
25th August to 8th September
Let Your Eyes Live Longer to help a blind

Facts about Eye Donation

• 1.2 lakhs corneally blind people requiring cornea for transplantation to get back their vision.
• Approx 20,000 new cases get added every year.
• Majority of them are young.
• The eyes you donate can give sight to two-four corneally blind persons.
• Eyes can be pledged before and donated only after death.
• Eyes must be retrieved within 6-8 hours of death.
• All religions endorse the practice of eye donation.

Prevent- Eye Injuries. Blunt and perforating.
Do not ignore eye injuries, seek the advice.

Space for Eye Banks

NATIONAL PROGRAME FOR ORPHANED EYES
Ministry of Health & Family Welfare, Directorate General of Health Services, MoHFW
Nirman Bhawan, New Delhi-110 108
Donation Fortnight  
27th September, 2012

Donate Eyes
so that person see.

Immediate action to be taken for Donating Eyes

- At Home / Neighbourhood: Toll Free 1919 (from MTNL / BSNL) or nearest eye bank.
- At hospital: contact Doctor on duty / Eye Donation Counselor.

Make Eye Donation a family tradition.

Corporating eye injuries need urgent attention. Take advice of eye specialist immediately.

FOR CONTROL OF BLINDNESS
Ge, Directorate General of Health Services, 1010 108, www.mohfw.nic.in/hpcb.nic.in
The “basic need” approach for human development has identified six strategic areas globally. These are health, basic education, nutrition, water supply, sanitation and housing. The degree of deprivation and socio-economic exclusion in the society can be measured by using all these strategic areas. Out of these, housing is the most important basic need of mankind in terms of safety, security, self esteem, social status, self satisfaction and for sustainable development.

Housing, like food and clothing, satisfies the fundamental needs of human being. Except food and clothing, no commodity is more important than housing. In the present economic milieu, one can easily arrange food and clothing but might not be able to arrange a house either in the form of ownership or rental. Housing need of a common man, in itself is a challenging task throughout his life span.

A good house not only supports health, environment and quality of life but is also considered as an indicator of prosperity and growth of an individual and country. Housing sector has multiplier effects on economic growth and employment. It generates large scale employment directly and indirectly to a cross section of people including unskilled and semi-skilled labour. It also creates avenues and opportunities for dwelling based activities too. Inclusive growth that is envisaged in the current Five Year Plan can be better achieved by meeting the needs of the marginalized. Miloon Kothari (1993) has rightly said that the human right to adequate housing is the right of every woman, man, youth and child to gain and sustain a secure home and community in which to live in peace and dignity. It can be argued, in fact, that the right to housing has the potential to unify the various rights (the related fields that comprise life in security, peace and dignity) revolving around the struggle for a place to live, and that the attainment of other rights becomes that much more possible once the right to a secure place to live has been gained.
Housing has been considered as one of the major national crisis of our country since independence. Furthermore, the needs of rural housing and urban housing have been differently addressed by planners and policy makers because of their varied nature of application and effectiveness. Rural housing in particular is a serious concern for our country where 79% of the people lived in the rural area. The growth with equity can only be achieved by addressing the needs of rural housing. The government should provide shelter to the people with different needs and deprived sections of the society particularly in the rural sector after realizing their basic needs i.e. food and clothing.

**RURAL HOUSING STATISTICS AND IMPLICATIONS**

The core issue to be addressed by the National Rural Housing Policy is how to create and maintain the quality of permanent assets. Identification of target demography continues to incite debate and varied opinions came from policy experts, economists and social scientists from different backgrounds. Since a long period, rural housing has been one of the neglected sectors in rural infrastructure development and literature reveals that till date less study has been conducted so far on rural housing except by the government institutions.

**Rural Housing: Quantitative Analysis**

The total number of census houses have increased from 24.9 crores (2001) to 33.1 crore (2011) which around 33% higher than 2001 housing stock. The data reveals that rural housing stock has increased by 23% which is quite less in contrast to 54% increase in urban sector. Hence, we can say that the rural housing stock has not increased as much as it was expected to.

National Housing Policy was introduced to address the serious need of housing shortage in rural sector. It envisages both qualitative and quantitative improvement in rural housing sector. Empirical evidences show that better rural housing always has a positive correlation with creation of wealth and raises productivity in the rural sector in particular and hence augments social welfare too.

**Table-1- Variation in the Number of Census Houses – India 2001 & 2011(In Crores)**

<table>
<thead>
<tr>
<th>Census House (In Crores)</th>
<th>Total</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
<td>2011</td>
</tr>
<tr>
<td>Number of census houses</td>
<td>24.9</td>
<td>33.1</td>
</tr>
<tr>
<td>Occupied census houses</td>
<td>23.3</td>
<td>30.6</td>
</tr>
<tr>
<td>Used as residence</td>
<td>17.9</td>
<td>23.6</td>
</tr>
<tr>
<td>Used as residence-cum-other use</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Housing stock</td>
<td>18.7</td>
<td>24.5</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

There’s been a sharp rise in the decadal growth rates recorded in the number of census rural houses (24.3%), occupied census houses (23.1%) and those being occupied and used as residence (23.9%) between 2001 and 2011. The rural housing stock itself has recorded an increase of 23% between 2001 and 2011. Still the concomitant rise in population overall and schemes like MGNREGA which( enshrine the right to work as a fundamental right) aim to restore much of migrant rural population back to their place of domicile, the need for having a focused rural housing strategy is one which continues to provide challenge to the policy makers. Hence, just provision of shelter to house less households is not enough but it should be continuous and sustainable too.

**Rural Housing: Qualitative Analysis**

The issue of identifying quality barriers and delivery of service is one of the major aspects of rural housing of the current scenario. Rural house always suffered on qualitative ground than quantitative but recent study on Census-2011 reveals that there is a substantial improvement in housing quality with respect to material used for roof, wall, floor etc.
Table-2-Rural Households by Material of Roof– India 2001 & 2011 (in percentage)

<table>
<thead>
<tr>
<th>Materials used</th>
<th>2001</th>
<th>2011</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass/Thatch/Bamboo/Wood/Mud</td>
<td>27.7</td>
<td>20.0</td>
<td>-7.7</td>
</tr>
<tr>
<td>Tiles</td>
<td>37.6</td>
<td>28.7</td>
<td>-8.9</td>
</tr>
<tr>
<td>Handmade tiles</td>
<td>NA</td>
<td>18.3</td>
<td>-</td>
</tr>
<tr>
<td>Machine made tiles</td>
<td>NA</td>
<td>10.4</td>
<td>-</td>
</tr>
<tr>
<td>G. I. / Metal/ Asbestos sheets</td>
<td>9.8</td>
<td>15.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Concrete</td>
<td>11.0</td>
<td>18.3</td>
<td>7.3</td>
</tr>
<tr>
<td>Others</td>
<td>14.0</td>
<td>17.1</td>
<td>3.1</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

If we compare and contrast the decadal variation (in %) as regards to types of material used for roof in which total number of houses built, we find the evidence of improvement in quality in terms of existing infrastructure. For instance, houses with one of grass/thatch/bamboo/wood/mud as roof building material has decreased by 7.7% between 2001 and 2011 while tiles that were used in houses as roof materials has decreased by 8.9% during the same period. Contrary to the above, the use of G. I. / Metal/ Asbestos sheets has increased by 6.1% whereas concrete has spiked to 7.3% in its material use.

Table-3-Rural Households by Material of Wall – India 2001 & 2011 (in percentage)

<table>
<thead>
<tr>
<th>Materials used</th>
<th>2001</th>
<th>2011</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass/thatch/bamboo</td>
<td>12.6</td>
<td>11.9</td>
<td>-0.7</td>
</tr>
<tr>
<td>Mud/un-burnt bricks</td>
<td>39.7</td>
<td>30.5</td>
<td>-9.2</td>
</tr>
<tr>
<td>Stone</td>
<td>10.5</td>
<td>13.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Packed with mortar</td>
<td>NA</td>
<td>10.0</td>
<td>NA</td>
</tr>
<tr>
<td>Not packed with mortar</td>
<td>NA</td>
<td>3.6</td>
<td>NA</td>
</tr>
<tr>
<td>Burnt brick</td>
<td>34.2</td>
<td>40.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Others</td>
<td>3.0</td>
<td>3.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

Meanwhile, in terms of material used for walls of houses, grass/thatch/bamboo remains as the favourable choice while the use of mud or un-burnt bricks have fallen by 9.2% in terms of decadal percentage between 2001 and 2011 indicating its decline in use as a material for wall of the house. On the other hand, uses of stone and burnt bricks have recorded an increase by 3.1 % and 5.8% respectively during that period, clearly indicating qualitative improvement in wall by material used.

Table-4- Rural Households by Material of Floor – India 2001 & 2011 (in percentage)

<table>
<thead>
<tr>
<th>Materials used</th>
<th>2001</th>
<th>2011</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mud</td>
<td>72.3</td>
<td>62.6</td>
<td>-9.7</td>
</tr>
<tr>
<td>Stone</td>
<td>4.5</td>
<td>6.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Cement</td>
<td>18.0</td>
<td>24.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Mosaic/Floor tiles</td>
<td>2.2</td>
<td>3.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Others</td>
<td>3.0</td>
<td>3.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

If we appraise material by floor, cement usage has increased considerably by 6.2% during 2001 and 2011 where as mud being the least choice of the people as a material by floor fall drastically by 9.7% during that decade. The preference of cement and mosaic over mud as a material for floor signifies quality improvement in rural housing.

However housing alone cannot support sustainable rural development unless supported by basic amenities like, drinking water, sanitation, garbage disposal etc. The recent data confirms that provision for bathroom and toilet/latrines is a serious concern in the rural housing sector. This can be understood by analyzing the table given below:

Table-5-Households Having Bathing Facility within the Premises -2011 India (in percentage)

<table>
<thead>
<tr>
<th>Have bathing facility within premises</th>
<th>Have facility</th>
<th>Enclosure without roof</th>
<th>Does not have facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathroom</td>
<td>Rural</td>
<td>Urban</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>25.4</td>
<td>77.5</td>
<td>42.0</td>
</tr>
<tr>
<td></td>
<td>19.7</td>
<td>9.5</td>
<td>16.4</td>
</tr>
<tr>
<td></td>
<td>55.0</td>
<td>13.0</td>
<td>41.6</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

The qualitative assessment of dwelling units
not only depends upon the types of material used for roof, floor and wall but also depends upon the provision of basic amenities like bathroom and toilet facilities etc. The table reveals that 55% of rural households do not have bathroom facility within their premises. Similarly 69.3% rural households do not have toilet facility within their premises. It clearly shows the unhygienic peripheral environment as people openly defecate in the rural area. Although open defecation has come down from 78.1% in 2001 to 69.3% in 2011, still there is a serious call for of public provisioning for bathroom and toilet facilities in the rural areas.

**Table-6-Households Having Toilet Facility India: 2001 & 2011 (in percentage)**

<table>
<thead>
<tr>
<th></th>
<th>Have toilet facility within premises</th>
<th>Do not have Toilet facility within premises</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
<td>2011</td>
</tr>
<tr>
<td>Total</td>
<td>36.4</td>
<td>46.9</td>
</tr>
<tr>
<td>Rural</td>
<td>21.9</td>
<td>30.7</td>
</tr>
<tr>
<td>Urban</td>
<td>73.7</td>
<td>81.4</td>
</tr>
<tr>
<td>Rural-Urban Diff.</td>
<td>51.8</td>
<td>50.7</td>
</tr>
</tbody>
</table>

(Source: Census 2011, GOI)

Another measure which indicates quality in terms of area of the house relative to the needs of a large average family, the current distribution of households in rural area in terms of total number of rooms is most dense for one or two room houses with a respective share of 39.8% and 30.2%, constituting a net lion share of 70% of the houses overall. The point of neglect or attention should be focused at houses with no exclusive room which have share of 3.4 %. This indicates a high degree of congestion effects on rural households in particular which is a matter of concern.

Recently Government has taken various steps to spruce up the housing need of the rural sector. But the initiatives like IAY schemes and HUDCO rural housing schemes mainly designed to support the construction of new houses where as a large number of unserviceable kutcha rural houses has got least priority for repair, maintenance and improvement. If the government is not able to provide enough support immediately, at least sufficient provisions and funds should be made available for repair and maintenance of existing serviceable and partly serviceable houses in the rural areas. But in long run, pucca construction is indispensable for providing sustainable living to the rural people.

**INDIRA AWAAS Yojana and its Evaluation**

Indira Awaas Yojana (IAY) is a flagship scheme of the Ministry of Rural Development to provide houses to the poor and deprived sections in the rural area.

Initially, housing need of the rural sector was addressed as a part RLEGP and as such no
serious and concrete policy has been made for rural housing till 1985. After the implementation of Jawahar Rozgar Yojana (JRY-1989), IAY became a special quarter for getting fund allocation meant for rural housing but it became an independent scheme from 1st January 1996. Since then, a number of state and centre sponsored housing initiatives through IAY has been taken to improve the rural housing through upgradation of kutchta houses and by providing credit linked support scheme especially for deprived sections in the rural area.

**Objectives and Implementation of IAY**

The core aim enshrined in Indira Awaas Yojana is to spruce up construction or upgradation of housing units for members of SC, ST, freed bonded labourers, minorities in the below poverty line category and other BPL non-SC/ST rural households by giving them lump sum financial assistance.

The allocation of funds is earmarked to be centrally sponsored on cost sharing basis between central and state government in the ratio of 75:25 while for Sikkim and North-Eastern States; the ratio is 90:10.

The focus groups as identified in the scheme are rural BPL households, minority BPL, freed bonded labourers, SC, ST, widows, next-to-kin to defence personnel/paramilitary forces killed in action residing in rural areas (irrespective of their income criteria), ex-servicemen and retired members of paramilitary forces fulfilling other conditions.

The onus of identification of potential beneficiaries rests with the District Panchayat/Zilla Panchayat/DRDA on the basis of allocations made and targets pre-fixed, while the construction/upgradation of rural housing infrastructure for targeted groups is to be implemented by concerned Panchayat.

Permanent IAY waitlists are to be prepared on the basis of BPL rosters in order of seniority. Thereafter the ranking of shelterless BPL families is determined by Gram Panchayat, while a separate ranks ordered list of SC/ST families is to be identified suited to execute 60% houses under this scheme for them.

Once the lists are prepared, approval is to be passed by Gram-Sabha (to be attended by a government servant who should be a nominee of DM). Later on information about the final selection must be conveyed to Zilla Parishad/DRDAs and Block Development Officer.

Beneficiaries are to be involved in the construction of their houses, provided complete freedom is given to them as far as manner of construction is concerned. Material procurement is to be facilitated on controlled rates by Zilla Parishads/DRDAs.

Finally allotment of dwelling units is made in the name of female member of beneficiary household or in the name of both husband and wife. In case, no female member is found, it can be allotted to any male member of a deserving BPL family.

**Physical Achievement of IAY**

The number of houses sanctioned including North Eastern States are 1243012 units to Schedule Caste and 559550 units to Schedule Tribe at all India level during the year 2010-11. Minority and others got 426255 and 1118930 units of houses respectively to their credit during the same year. Hence in total, 3347747 units of houses are sanctioned to SC, ST, minority and others.

Out the above total houses, 2029837 units of houses are sanctioned to women and 890454 units of houses are sanctioned to both wife and husband respectively. Beside these, 55306 units of houses are also sanctioned to physically handicapped people too.

On other hand, 2371865 units of houses are found under construction, out of which 418951 units of houses are sanctioned prior to last years and 1952914 units of houses are sanctioned.
during the last or current year. The total number of houses completed in all respect was 2715453 units as on 31.03.2011. This is 93.36% of total number of houses sanctioned by the government. Hence we can conclude that our target achievement is better than expected.

**Financial Performance of IAY**

As on 31.03.2011, Rs. 1795654 lakhs of the total fund is available to IAY which comprises of the contribution of funds both by central and state government. The scheme has utilized only Rs. 494712 lakhs for Schedule Caste and Rs. 243503 lakhs for Schedule Tribe. For minority and others, government has utilized Rs. 169220 lakhs and Rs. 439138 lakhs for the IAY schemes. Hence, the total fund that has been utilized by different categories in different states constitutes only Rs. 1346573 lakhs which is around 75% of the utilization of total available fund. This statistics includes all the states and union territories up to 31st March 2011. Hence the government should take extra effort to utilize the unutilized fund for the benefits of the deprived sections of the society through IAY rural housing schemes.

**Pertinent Suggestions for better Rural Housing**

- Micro housing finance institutions should be promoted and to be supported by the government at rural level so as to provide various types of credit to the rural poor either for construction purposes or for repairing of houses.

- Reasonable rate of interest should be charged by the banks on loans for credit-cum-subsidy scheme for rural housing and it has to be regulated by the government from time to time.

- Rural shelterless people need to be encouraged for their saving habit by offering higher rate of interest.

- Leakages in implementation stage can be prevented by adopting stringent actions against any violation and misuse of funds either by officials or beneficiaries.

- Each and every Gram Panchayat should identify the housing need of their people and prepare a list and should convey the same to DRDA/ Zila Parishad.

- Provision of finance is not enough, development cost-effective construction technology is also essential. It must ensure structural strength and stability in tenure against any change in weather conditions.

- Effort has to be made to make use of local material, skills etc. through strategically designed institutional mechanism.

- There is need to develop co-operative society in rural sector to pull the local resources to support rural housing.

- Different Self-Help Groups are quite active in urban sector but they are not active in rural sector to address the housing need of the deprived sections in particular. Hence these organization need to enlarge their operating area in rural sector.

**Concluding Remarks**

The emphasis of rural housing should be more and more on inclusiveness and on quality improvement. When a poor man owns a house, it helps in giving him a self-identity. Housing sector has positive impact on overall standard of living of the rural people. There is also serious need to build a market based inclusive and sustainable housing finance system. The government should support various schemes of rural housing and ensure quality improvement in rural housing from time to time. In fact, democracy loses its shine if the poorer and the deprived masses of our country are not able to share the progress and prosperity of our country, which is visible in rural sector. Hence deliberate effort has to be taken by the government in rural areas for the betterment of deprived segments of the society in the planning process.

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RURAL HOUSING & ROLE OF INDIRA AWAS YOJANA

Dr. Kameswari Peddada

Homelessness and provision of safe and sanitary housing for all the citizens is a stupendous problem faced by the Government of India after Independence and is ever-increasing in proportion to the population growth.

“The issue of adequate housing is integral to poverty reduction and social justice” - Abraham George, Founder of the George Foundation, an N.G.O. focused on poverty alleviation in India.

While classifying the rural houses, Census 2001 has used the following definitions:

**Permanent Houses (Pucca):** The walls and roof are made of permanent material.

**Semi-permanent Houses:** Either the walls or the roof made of permanent material.

**Temporary Houses (Kutcha):** Both the walls and roof are made of materials that need to be replaced frequently.

**Serviceable temporary houses:** The walls are made of mud, unburnt bricks or wood.

**Non-serviceable temporary houses:** The walls are made of grass, thatch, bamboo or plastic.

**Indira Awas Yojana (I.A.Y.)**

It is a flagship scheme of the Central Ministry of Rural Development and a major social welfare programme to provide houses to the poor in rural areas. The objective is primarily to help in construction/upgradation of dwelling units by providing subsidies and financial assistance for:

1. BPL households in rural areas: S.C./S.T., freed bonded-labourers, minorities and others (non-SC/ST),
2. Widows and next-of-kin of defense personnel or paramilitary forces killed in action (irrespective of their income criteria) and ex-servicemen and retired members of paramilitary forces wishing to reside in rural areas, provided they meet the basic eligibility criteria.

The houses are allotted in the name of the woman or jointly between husband and wife. The construction of the houses is the sole responsibility of the beneficiary and engagement of contractors is strictly prohibited. Sanitary latrine and smokeless stove (‘chullah’) are required to be constructed along with each IAY house for which additional...
financial assistance is provided from Total Sanitation Campaign and Rajiv Gandhi Grameen Vidyutikaran Yojana, respectively. It is funded on cost-sharing basis between the Central and the State Governments in the ratio of 75:25. In the case of North-Eastern States and Sikkim, funding will be shared in the ratio of 90:10.

In the case of Union Territories, the entire funds are provided by the Government of India. The funds are allocated to the states based on 75% weightage of rural housing shortage and 25% weightage of poverty ratio. The housing shortage is as per the official published figures of Registrar General of India based on the 2001 Census.

**Identification of Beneficiaries:**

The District Panchayat/Zilla Panchayat/District Rural Development Agencies (DRDAs) on the basis of allocations made and targets fixed shall decide the number of houses to be constructed/upgraded Panchayat-wise under IAY, during a particular financial year. The same shall be intimated to the Gram Panchayat concerned. Thereafter, the beneficiaries, restricting to this number, will be selected from the Permanent IAY Waitlists prepared on the basis of BPL lists in order of seniority in the list. The Gram Panchayats may draw out the shelterless families from the BPL List strictly in the order of ranking in the list. A separate list of SC/ST families in the order of their ranks may be derived from the larger IAY list so that the process of allotment of 60% of houses under the scheme is facilitated. Thus, at any given time, there would be two IAY Waitlists for reference, one for SC/ST families and the other for non-SC/ST families. Once the lists are prepared, they need to be approved by the Gram Sabha to be attended by a Government servant, a nominee of the Collector. Selection by the Gram Sabha is final. No approval by a higher body is required. Zilla Parishads /DRDAs and Block Development Offices should, however, be sent a list of selected beneficiaries for their information. The Permanent IAY Waitlists so prepared will be displayed at a prominent place either in the Gram Panchayat Office or any other suitable place in the village. The lists will also be put on the website by the concerned DRDAs.

**Unit Assistance for Construction and Upgradation of IAY Houses:**

The ceiling on grant of assistance per unit cost for construction of a new house and upgradation of an unserviceable kutcha house is given as under:

(a) Construction of house: Rs. 45,000/- (plain areas) and Rs. 48,500/- (in hilly & difficult areas)

(b) Upgradation of un-serviceable households: Rs. 15,000/- Rs. 15,000/-

An IAY beneficiary, in addition to the IAY assistance, can avail a loan of upto Rs.20,000/- per housing unit under differential rate of interest (DRI) scheme at an interest rate of 4% per annum from banks. The BPL rural households in the permanent IAY Waitlist and not having a homestead are provided house sites by providing Rs.10000 per homestead.

**Technological Components in IAY:**

If the IAY beneficiaries so desire, government departments can provide technical assistance, like innovative technology, low-cost but quality building material, designs and methods of constructing or upgrading houses to durable and disaster-resistant lodgings or arrange for coordinated supply of raw materials like cement, bricks etc., though not innate in the scheme itself. Some of the Research Agencies in rural housing are:

1. Central Building Research Institute, Roorkee
2. National Institute of Rural Development (NIRD), Hyderabad
3. Advanced Materials and Processes Research Institute (AMPRI), Bhopal
4. National Building Construction Corporation Limited (NBCCL), New Delhi

Also State governments may give guidance on cost effective environment friendly technologies, material and designs for rural houses. Around 85 Rural Building Centres were set up by the Ministry to enable access in different parts of the country to appropriate technologies and capacity building at the grassroots level. Though the scheme has been discontinued from 2004, these centres are expected to continue to support technology transfer and produce cost-effective material.

**Review of Performance of I.A.Y.:**

Vision for Rural Housing as formalized by the Ministry of Rural Development is to “ensure adequate and affordable housing for all and, facilitate development of sustainable and inclusive habitats in rural areas by expanding government support, promoting community participation, self-help and public-private partnership within the framework of Panchayati Raj”. The Planning Commission of India has constituted a Working Group on Rural
Housing to provide a perspective and approach to rural housing under the Twelfth Five Year Plan. The housing shortage in rural India was estimated at 40 million households until the end of the twelfth plan period. The Working Group advocated measures to address the need for safe and sustainable housing by all segments of the rural population as part of a ‘holistic habitat development’ approach, which also includes sanitation, water supply, domestic energy and insurance cover. The target set for IAY under the XI Five year plan was 150,00,000 houses over a period of five years. As of 30th June 2011, 10593557 were constructed with an achievement of 86.54%.

**Shortcomings of I.A.Y.:**

1. Achievements still fall short of the targets set for rural housing for each category.
2. Beneficiary selection often for considerations other than poverty and deprivation.
3. Several States & UT’s not finalizing permanent waitlists and furnishing performance data.
4. Lack of adequate convergence with other Government Schemes for habitat improvement.
5. Current Cost of Unit Assistance insufficient for a basic minimum house.
6. Need for a better network for delivering safe, sustainable and low-cost housing technologies.
7. Low utilization of housing loans under DRI.

**State-Run Housing Schemes**

Long before the Central government introduced any scheme for rural housing some state governments have implemented rural housing programmes. Currently, around 15 States/UTs like Andhra Pradesh, Karnataka, Kerala, Gujarat and Tamil Nadu have their own schemes, whose scope extends much beyond that of the I.A.Y. They have been supplementing and complementing the efforts of the Central Government in rural housing.

**Cumulative Performance of House Construction under IAY during the XI Plan period**

**Financial & Physical Performance (2011-2012)**

| Allocation of Funds under IAY | Rs. 9991.20 cr (incl. Rs. 500.00 crore for Homestead Component) |
| Central Releases | Rs. 9864.77 cr |
| Total Available Funds | Rs. 19106.74 cr |
| Utilization | Rs. 12814.88 (67.07%) |
| Physical Target | 27.27 lakh |
| Physical Achievement | 24.66 lakh (90.43%) |
| No. of Houses sanctioned in 2011-12 | 32.65 lakh (119.77%) |
| No. of Houses sanctioned to SC/ST | 17.04 lakh (52.21%) |
| No. of Houses sanctioned to Minorities | 4.15 lakh (102.43% of minority target) (12.73% of total target) |

**Note:** * - Some states yet to report progress upto 31-3-2011; ** - Progress upto 30-6-2011. **Source:** MoRD

**Recommendations for Achievement of Rural Housing Vision**

1. From the experience gained by implementing various schemes for rural housing so far, the following strategies are expected to realize the vision of a safe and sustainable housing for the rural masses.
2. Enabling structured access to land, appropriate finance and risk mitigants is a critical and fundamental pre-requisites for habitat development that is safe and sustainable in the long run.
3. Creating a facilitative environment for promotion of appropriate building materials and technologies as well as development of human resources required for disaster resilient and sustainable habitat development.
4. Providing and enforcing a well defined, transparent and monitorable techno-legal regime to ensure access to housing for all sections of the rural population through community and Panchayat based processes.

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The commentary on the disparity between achievable goals of human development and the reality, that was made two centuries ago stands true to this day. Industrial revolution and scientific progress were to ensure human progress, helping every individual to lead a healthy, happy and a fulfilling life. Yet the gap between individuals widened to create competing classes, with a few cornering the fruits of prosperity. The beginning of the new millennium brought the countries of the world together to think over how they can include the millions outside the realm of development, side-lined and neglected for many years with little to fend for themselves in the present and nothing to hope for in the future. That the leaders of the world came up with the Millennium Development Goals (MDGs) and committed to achieve the target of inclusive growth with a time line indicates how urgent intervention was. A report of WHO Valuing water, Valuing Livelihoods underlines the moral and human rights principles that guide the necessity for time bound international development targets by quoting Article 12 of the International Covenant for Economic, Social and Cultural rights that recognises ‘the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.’ The two important areas discussed in this essay, i.e., providing safe drinking water and improved sanitation for all is to be seen in this context.

The year 2015 is the deadline for achieving the targets world over and though we have made remarkable strides, resources are still insufficient for many countries including India to reach the target. This puts a severe strain on the gains already made and the millions yet to be targeted. In the decade 1990-2000, 2 billion people gained access to safe drinking water and 1.8 billion people to improved sanitation. Of this, half of the population resided either in India or China. Yet both these countries also populate 28% of the ‘unserved’ population. The Millennium Development Goal on drinking water was met in 2010 but even if we go at the current rate of development we will achieve only 67% of the target for sanitation by 2015 that leaves 580
million people out. This goal is different from Universal targets as even after achieving the MDGs, 783 million people will still live with unsafe drinking water and 2.5 billion with unimproved sanitation.

**The Indian Scenario**

Poverty alleviation, drinking water supply and sanitation have been in our public health agenda for so long. There exists huge disparity in the access to safe drinking water and improved sanitation among different regions (urban and rural), different communities, age groups (Adults and children) and gender that calls for a targeted approach in India. Before going further it is meaningful to define the targets ‘safe drinking water sources’ and ‘improved sanitation’ to assess the situation in India accurately. The WHO/UNICEF report on water 2010 gives the following definition.

**Table 1 (a) Improved and Unimproved Water supply**

<table>
<thead>
<tr>
<th>Improved Water Supply</th>
<th>Unimproved Water Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piped into dwelling/yard</td>
<td>Unprotected Dug well</td>
</tr>
<tr>
<td>Public tap/stand pipe</td>
<td>Unprotected spring</td>
</tr>
<tr>
<td>Tube well/dug hole</td>
<td>Cart with small tank/ tanker truck</td>
</tr>
<tr>
<td>Protected dug well</td>
<td>Surface water</td>
</tr>
<tr>
<td>Protected spring</td>
<td>Bottled water</td>
</tr>
</tbody>
</table>


**Table 1 (b) Improved and Unimproved Sanitation**

<table>
<thead>
<tr>
<th>Improved Sanitation</th>
<th>Unimproved Sanitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flush/ Pour Flush to piped sewer system/ Septic tank/pit latrine</td>
<td>Flush /Pour flush to elsewhere</td>
</tr>
<tr>
<td>Ventilated pit latrine</td>
<td>Open pit</td>
</tr>
<tr>
<td>Pit latrine with slab</td>
<td>Bucket</td>
</tr>
<tr>
<td>Composting Toilet</td>
<td>Hanging toilets/ bush/ field</td>
</tr>
</tbody>
</table>


According to UNICEF, 638 million Indians (more than 50%) defecate in the open and 44 % mothers dispose of their children’s stools unsafely in the open. This is an unacceptably higher figure compared to the same problem in other growing economies like China (4%) and Brazil (7%). 21% of all the communicable diseases in the world are water related and 88% of the 4 billion annual deaths due to diarrhoea are due to unsafe water, unimproved sanitation and lack of hygiene. Naturally, diarrhoea is also the second biggest cause of death of a child under 5 years as it causes severe under nourishment. It is no surprise that India also has a very high rate of malnourishment (48%) among children under five. The four cardinal principles that reduce the diarrhoeal morbidity are hand washing with soap, safe water supply, water treatment and sanitation. Thus water supply and sanitation are intricately and inevitably linked. But of the 88 % population that receive water from improved sources in India, only a quarter has water in their premises. That is why women and girls spend more than 1.6 hours a day to carry water for their families. This leads to an inadequate supply of water (below the global norm of 20 litres fresh water per person per day), injury and health issues to women and the family and wastage of time that could have been used for other economically productive activities. It also affects the children specifically by preventing them from attending school regularly. Incidentally, a regular school education fosters better hygienic practices in children and consequently the family. Lack of water supply near home affects the girl child in particular by robbing her of dignity and forcing her to compromise on her personal hygiene.

The urban – rural divide in access to water and sanitation is stark. 80% urban Indians have piped water supply against 29% of their rural counterparts. The rural Indians face five major problems

(i) Poor water purification and testing

(ii) Inadequate quality water in the premises (within 1 km of the residence)

(iii) Inadequate sanitation facilities

(iv) Lack of Hygiene and healthy practices to well being

(v) General environmental degradation

This is compounded by supplementary causes. Most of the rural villages in India are in remote dry areas. They are served with water through small community management with local mobilisation and no sense of ownership or awareness of the process from supply to homes. This is aggravated by other priorities and budgetary constraints. Typically, the poorest of the rural Indian family spends 90% of their income on food and the payment for maintaining water source has to be deducted from this. Therefore they have little say in resource allocation. Limited political engagement leads to limited access to technology as well. Generally it is found that water sampling, certified operators and risk assessment is very poor in these areas. Leaving basic infrastructure to community initiatives without state support will leave millions out. The UNDP assessment that in countries with high levels of poverty, ‘public finance is a requirement whether or not the goods are private or public’ stands good for India.
Benefits of safe water and improved sanitation

The benefits of having better water and sanitation in rural areas outweigh the initial investment required. The positive outcome is twofold:

(i) Health benefits: It is proven that if water is supplied within 1 km of the residential area, the consumption of water doubles or triples. This will ensure better hygiene practices reducing diarrhoea and other communicable diseases. Physical stress and injury that the water carriers (women and girls) go through can be avoided.

(ii) Opportunity costs: The time that women and girls put in to get water for their families from far away sources can be saved. The time saved is opportunity gained for productive economic activities. Girls can attend school and women can take up jobs for their families.

Global economic return on sanitation is $5 for every $1 spent. This saves $10 billion annually.

The need of the hour

The ideal approach to tackle the gaps in policy and reality would be to identify feasible intervention options, estimate cost and benefits and choose a low cost effective approach for universal access to safe drinking water and improved sanitation. This requires the dedicated commitment from different players and stake holders.

(i) Political will: As an infrastructure policy that requires public financing, political will is a decisive factor that ensures water and sanitation priorities by allocating resources and finance. Effective and transparent monitoring system to ensure accountability and enforcing legal framework to support the policy is a must. The ETHekwini Declaration by 30 African Governments that committed 0.5% of their GDP to sanitation is a stellar example of genuine political will. The government of Burkina Faso releases its annual report on water and sanitation in both urban and rural areas. This provides data and ensures follow-up of policies.

(ii) Policy: One of the six components of Bharat Nirman Programme was to have completed rural infrastructure by 2008-09. Yet we seriously lag behind on our targets. The national Rural Drinking Water Mission renamed as Rajiv Gandhi Scheme and Total Sanitation Programme are the two major programmes for water and sanitation in India. The Nirmal Gram project has been successful to a limited extent. We need a lead institute for sanitation and a holistic approach between the different ministries to work under the same framework to achieve our goals.

(iii) Technology and Infrastructure: Improved technology can ensure sanitation facilities with excreta removal and treatment. Skilled labour and scientists can act as quality managers for water. Low cost interventions like treatment of water at home including boiling, filtering and chlorine tablets can be used. Local attitudes regarding hygiene has to be studied to ensure better hygiene practices through hygiene behaviour change. The role of women and education of children in this context has to be emphasised.

(iv) Effective decentralisation with External Support: Engaging local stakeholders with well defined roles for better management of community water supplies and information dissemination is a must. Prioritisation of water and sanitation policies and institutional capacity building will go a long way in ensuring universal coverage.

(v) Finance: India spends only a quarter of the investment required for universal coverage. India is one of the top recipients of international aid but spends only 0.2% of its GDP on water and sanitation. This makes out a case for increased financing with accountability in the immediate future.

(vi) Data dissemination: For a large scale programme with ambitious goals, tracking what is being done is necessary. Standardised data has to be available. This can be done through harmonised questionnaire and keeping track of not only the targeted population but maintenance of continued water supply and sanitation facilities. Expanding the database is also desirable.

A national target on the twin goals of safe drinking water and improved sanitation to rural India and a synergistic working of the governmental and non-governmental agencies alone can ensure universal water coverage and sanitation at least in the next decade. A country like India that aspires to be developed in the near future cannot renge on its priorities and promises to its citizens regarding a healthy and fulfilling life.

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International Telecommunication Union has estimated that one per cent investment in telecommunication results in 3 per cent increase in gross domestic product (GDP) which confirms the linkages between tele-density and GDP. The tele-density in India— the number of telephone lines for every 100 people is abysmally low. Teledensity in rural India is only 0.5 and one third of India’s 6,00,000 villages area still without a village public telephone (VPT) which can save transport costs, fuel and time.

Telecommunication revolution has indeed swept the country and the future looks even more prospective. Gather, the international research group, estimated a few years back that there would be as many as 1.28 billion telephony in 2006. It needs to be pointed out that the scenario projected by gather of the dominance of fixed line being around 7515 in 2006 has changed cellular lines are definitely higher presently. Technological innovations especially during the latter half of the 20th century have progressed at such a rapid pace that they have permeated almost every facet of our lives.

What is Telecommunication?

Tele is Greek word meaning distance and communication is started from the Latin word Communis which means common. According to Roger and Shoemaker (1971) communication is the process by which message are transfer from source to receiver. Telecommunication is defined as the sharing the feeling to those people who are nearing or far away from us. Telecommunication is the transmission of messages, over significant distances, for the purpose of communication. In earlier times, telecommunications involved the use of visual signals, such as smoke, semaphore telegraphs, signal flags, and optical heliographs, or audio messages via coded drumbeats, lung-blown horns, or sent by loud whistles, for example.

Process of Telecommunication

The entire Rural telecom has been seen more from the point of view of profitability rather than as a part of the large Telecom network in the country. The focus has been on the average number of calls, which are made from the Rural telephone but this perspectives approach which change if each telephone connection part of a large Indian telecom network.

The telecom expansion strategy adopted in urban areas cannot be duplicated for the rural areas. Rural specific strategy would require to be worked
out taking into account its main economic activity migration pattern magnitude of the population geography distance from the nearest Urban town/ City economic linkages with the adjoining rural areas and town and cities, health, education, and education facilities and technology.

**International Telecommunication Union (ITU)**

International Telecommunication Union has estimated that one per cent investment in telecommunication results in 3 per cent increase in gross domestic product (GDP) which confirms the linkages between tele-density and GDP. The tele-density in India- the number of telephone lines for every 100 people is abysmally low. Teledensity in rural India is only 0.5 and one third of India’s 6,00,000 villages area still without a village public telephone (VPT) which can save transport costs, fuel and time. The VPTs have several benefits such as reducing migration from rural to urban areas and providing communication assistance in disaster, relief and rescue operations. The overall tele-density stands at 3.8 whereas China has a tele density of 9 and the World telephones were to be available on demand by 2001 but the waiting list in November 2001 was 3.2 million. The deregulations of the telecom industry and action on Internet telephony have received greater attention than proposals for rural and household telephones.

**Evolution of Mobile Technology**

Mobile technology refers to technology that is portable. In this since of the term mobile technology includes: mobile phones and smart phones end phones with more advanced capacities, laptop computer and global positioning system devices and so on. This mobile device provides possible networking to home office of the Internet while on move. This technology helps one to get connected to others at home, office and create a shred environment. Mobile Communications is the assisted transmission of signals over a distance for the purpose of communication to or from a mobile device or user. It allows the user to be connected while on the move. Starting from its early beginnings in the late 1970s and early 1980s, the mobile communication technology has undergone many revolutions drastically changing the face of this services in terms of usability cost, quality and quantity of service it offers. In this process of evolution, it has undergone through certain distinctive stages known as generations of mobile telecommunication technology defined in terms technical features and standards of services delivered to the consumers.

In 1980 mobile phone systems was an analogue offering to support basis voice services to the users like advanced mobile phone system (AMPS), Nordic mobile Communication. The second generation (2G) mobile network based on the GSM (Global System for Mobile Communication).

**Mobile telecommunication**

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In 1980s mobile system was analogue offering to support basic voice services to the users like advanced mobile phone system (AMPS), Nordic mobile phone telephone (NMT) etc. the second generation (2G) mobile network based on the GSM (Global System for Mobile Network) technology had the capacity to carry higher quality of voice calls, basic short messaging services (SMS) and very low speed data connectivity. With the introduction of technologies such as enhanced data rates for GSM evolution (EDGE), code division multiple accesses (CDMA) and digital advanced mobile phone services (DAMPS) in 1990s the mobile systems evolved to accommodate higher speed of data transfer up to 384 kb/sec. the system of digitally encrypted phone conversation made the 2G mobile system significantly more efficient on the spectrum allowing for far greater mobile phone penetration levels and introduced data services for mobile, starting with SMS text message.

**Mobile Phone Initiatives**

In Pondichery, the information village project of M.S. Swaminathan research foundation has connected ten village by a hybrid wired and wireless
network—consisting of PCS telephone, VHF duplex radio devices and email connectivity through dial up telephone lines that facilities both voices and data transfer and have enabled the villagers to get information that they need and can use.

In West Bangal, in certain remote villages enterprising villagers are already running mobile PCOs, visiting a particular village on a fixed day. In AP, last year a unique Gram Phone project using an Ultra-low cost solution was successfully executed in Kalleda, a remote village in Warangal district by Hyderabad based rural telecom foundation (RTF) a nonprofit NGO and has been able to cover 70 of the households in the village within a short span of two months called the Gram phone in a modified as a party time based on a very low cost, modulator, easily expandable configuration for sharing a single wire line that is complementally compatible with all of the existing 25,000 CDOT exchanged in rural areas.

Telecommunication Connectivity Under the Bharat Nirman Programme, it will be ensured that 66,822 revenue village in the country, which have not yet been provided with a village public telecommunication (VPT) shall be covered. Out of the above village Public connectivity in 14,183 remote and far flung villages will be provided through digital satellite Phone terminals. A National Sample Survey Organization (NSSO) study reveals that 71 per cent of the farmers do not even know about the Government’s minimum support price (MSP) scheme. The need for multimedia content and communication is much more important in the rural context ob account of low literacy levels and innate connectivity requirements of rural tele medicine and e-education etc. The government emphasis on telecom sector is quite evident with the use scheme for coverageITU’s latest statistics, published in The World in 2009: ICT facts and figures, reveal rapid ICT growth in many world regions in everything from mobile cellular subscriptions to fixed and mobile broadband, and from TV to computer penetration - with mobile technology acting as a key driver.

Mobile growth is continuing, with global mobile subscriptions expected to reach 4.6 billion by the end of the year, and mobile broadband subscriptions to top 600 million in 2009. China surpassed the 600 million mark by mid-2008, becoming the world’s biggest mobile phone market Growth in India’s mobile sector, from a humble start in the mid-1990s, has really picked up pace in recent years, aided by higher subscriber volumes, lower tariffs and falling handset prices. Home to a clutch of global operators working with local companies, India had almost 350 million mobile subscribers (including GSM & CDMA) in early 2008.

“Market liberalisation has played a key role in spreading mobile telephony by driving competition and bringing down prices,” the ITU noted. India’s mobile operators have been attracting new customers with call rates as low as US$0.01 a minute and by offering cheap handsets. While offering some of the lowest tariffs in the world, the market also had the highest usage in the world with the average customer using 500 minutes a month.

Universal Service Obligation Fund (USOF)

As of April 2009 the country had 430 million telephone connections with the mobile segment accounting for 93 per cent. However 70 per cent of all connection are present in Urban area which have a teledensity of 77 per cent. The plan now is to increase the rural teledensity four fold to 40 per cent within the next 5 year and ensure that every Panchayat is connected to a broadband network in the next 3 year.
Kisan Call Centre Services:

In case of mobile phone based services central and state Government and private players are increasingly tapping into this widely available medium. An example of the same is the KCC services recently launched by the Directorate of Extension, Dept. of Agriculture and cooperation which offer expert advice on Agriculture related problems/queries. In the private sector, a good example is Bharti- IFFCo’s joint venture whereby cheap mobile handsets costing less than Rs.2000 are bundled with mobile values added services such as free daily voice messages on marketing prices for their produce, farming technology weather forecasts daily farming and fertilizers availability.

Rural Broadband Kiosks

Various studies have shown that both mobile and broadband content have shown a healthy demand from villagers for Agriculture, marketing tele-education and e-health services. The desire to learn English and other subjects through mobile/Internet Application is particularly strong and has a significant revenue potential in Rural India. Recognizing that relevant content in local languages in necessary to make rural broadband services meaningful USOF ha encouraged the adoption of a franchisee model in parternership with professional content aggregators for the subsidized broadband Kisok being rolled out by BSNL under USOF’s wire line broadband scheme under its agreement with USOF, BSNL is to roll out about 28000 rural broadband Kisok are meant for access to basic browsing and various types of commercial values added services including entertainment, Information, tele-education and telemedicine.

Telecommunication in Health

Telemedicine is new approach in Health Communication. Telemedicine is still in its infancy in India but is undergoing rapid development. Telemedicine is coming up as an alternative in provision healthcare services. It is the most effective method to provide specially care in rural area, where people do not have the financial means or the accessibility to medical services. Hence, in India, telemedicine will help people in remote geographical areas get the attention of a medical specialist in real time. Telemedicine is not a panacea for all the challenges facing the rural patients and community health providers, But it can bring hope and better healthcare to millions of people across the country, ensuring that a heartbeat in a secluded village can be heard clearly, even in a busy city.

Conclusion

In the changing media scenario, telecommunication systems to a large extent are facilitated by computerized system and wireless mobile telephony. In telephones long- distance data transmissions mobile telephones and Internet, it forms the basis of communication. The practice of telecommunication and related telecommunication based work from home; common in Europe and developed western nations is gaining ground especially in the IT sector in India. Telecommunication broadly includes people who operate a business from home, people who are employed by a firm that permits them to do some or all of the work at home and people who simply cannot finish their work at the weekends. Several MNCs and software and telephony corporations encourage telecommunicating among their highly skilled technical employees. Telecommunication is useful to rural as well as urban both areas. In rural areas telecommunication provides awareness, information as well as education. Rural development is only possible if the updated information is given to the rural women. The change is more visible in countries like India for the geographical penetration and adoptability of the mobile phones is very high compared to other Information and Communication technology and services. There are 563.73 million mobile phone subscribers and more than ten millions are added every month. High penetration suggests that mobile phones are widely used and have significant social and economic impacts. But for a technology to evolve and become better adapted to its users need to appropriate it, make it their own and embedded it with in their lives, then simply adopted it. Users renegotiate the technology to better answer their needs. The wide penetration of mobile phones in India is fundamentally because its use opens up new socio economic opportunities. Through experimentation, users explore innovative ways of adopting the mobile phone.

[Adita Sharma is from the department of Social Work, Surajmal Kanya Degree College, Bariely, U.P.]
Efficient use of water resource is basic to survival of the ever increasing population of a country, this is especially very crucial for India, where we are having less than 5% of the world’s water resources and more than 18% world’s population. Irrigation is one of the most important inputs required at different critical stages of plant growth of various crops for optimum production. The Government of India has taken up augmentation of irrigation potential through public funding and is assisting farmers to create potential on their own farms. Substantial irrigation potential has been created through major and medium irrigation schemes. In arid and semi-arid climatic conditions, the timing and amount of rainfall are not adequate to meet the moisture requirement of crops. Therefore, supplementary irrigation is essential to raise the crops, necessary to meet the needs of food and fiber for the growing population. Scientific irrigation water management provides the best insurance against weather induced fluctuations. This is the only way in which we can make our agriculture profitable and sustainable in the coming decades. The on farming irrigation management for different crops including efficient use of poor quality waters is an essential component of water management in irrigation command areas. It is felt necessary to include complete information on surface and sub-surface drainage. The information pertaining to
net sown area, gross sown area, net irrigated area and gross irrigated area over the period of time in India is given in the Table 1.

Table 1. Cropped and irrigated areas from 1951 to 2008-09 in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (million hectare)</th>
<th>Net sown area</th>
<th>Gross sown area</th>
<th>Net irrigated area</th>
<th>Gross irrigated area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-51</td>
<td>118.75</td>
<td>131.89</td>
<td>20.85</td>
<td>22.56</td>
<td></td>
</tr>
<tr>
<td>1960-61</td>
<td>132.20</td>
<td>152.82</td>
<td>24.66</td>
<td>27.98</td>
<td></td>
</tr>
<tr>
<td>1970-71</td>
<td>140.27</td>
<td>165.79</td>
<td>31.10</td>
<td>38.19</td>
<td></td>
</tr>
<tr>
<td>1980-81</td>
<td>141.93</td>
<td>176.75</td>
<td>40.50</td>
<td>51.41</td>
<td></td>
</tr>
<tr>
<td>1990-91</td>
<td>141.98</td>
<td>182.24</td>
<td>49.87</td>
<td>65.68</td>
<td></td>
</tr>
<tr>
<td>2000-01</td>
<td>141.10</td>
<td>187.94</td>
<td>54.68</td>
<td>75.14</td>
<td></td>
</tr>
<tr>
<td>2005-06</td>
<td>141.46</td>
<td>193.32</td>
<td>60.79</td>
<td>84.26</td>
<td></td>
</tr>
<tr>
<td>2008-09</td>
<td>141.36</td>
<td>195.10</td>
<td>63.20</td>
<td>88.42</td>
<td></td>
</tr>
</tbody>
</table>

1. Irrigation potential

The total ultimate potential was earlier estimated at 113.8 million hectares, which has now been received to 140 million hectares. The share of major and medium schemes that are surface water based is 58.5 million hectares, whereas that of minor schemes, based on surface water is 17.4 million hectares. The ground water based minor irrigation schemes are expected to contribute 64 million hectares compared with the earlier estimates of 40 million hectares.

2. Command area development

There has been large scale irrigation development but there was short fall in utilization of the potential created. To focus attention on efficient utilization of the created resources, a multi-disciplinary agency, the command area development authority was constituted in 1974-75. The command area development programme broadly covers:

a) On-farm development works;
b) Introduction of rotational system of water distribution within the out let command (warabandi);
c) Adoption of suitable cropping pattern rostering of irrigation system;
d) Development of ground water for conjunctive use;
e) Arrangement and supply of agricultural inputs and services including short-term credit;
f) Development of necessary infrastructure in the shape of roads, markets and ware housing/cold storages.

Command area development programme has been implemented in more than 100 irrigation projects with good results.

3. Basin-wise water resources

Monsoonal climate causes a highly skewed distribution of the resource availability and calls for its conservation in soil profile, aquifers, ponds, lakes, reservoirs and rivers for use during the lean period. India is a very fortunate country to have many rivers whose total catchment’s area is estimated to be 252.8 million hectares. Central water commission, Government of India, has divided the whole country in 20 river basins comprising 12 major basins, each having catchment’s area exceeding 20,000 km² and 8 composite river basins combining suitably together all the other remaining medium and small river systems.

Major basins are: i) Indus; ii) Ganga-Brahamputra-Meghna; iii) Godavari; iv) Krishna; v) Cauvery; Mahanadi; vi) Pennar; vii) Brahmani-Baitarni; viii) Sabarmati; ix) Mahi; x) Narmada and xi) Tapi

Likewise 8 composite river basins are: i) Subarnarekha - combining Subarnarekha and other small rivers between Subarnarekha and Baitarni; ii) East flowing rivers between Mahanadi and Pennar; iii) East flowing rivers between Pennar and Kanyakumari; iv) Area of inland drainage in Rajasthan desert; v) West flowing rivers from Tapi to Tadri; vi) West-flowing rivers from Tadri to Kanyakumari; Minor rivers draining into Myanmar (Burma) and Bangladesh. Catchment’s area and water resources potential of these basins is given in Table 3.
**Table 3. Basin-wise water potential in India**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>River basin</th>
<th>Catchment area (km²)</th>
<th>Water resources(km²/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>As per Central Water Commission 1993</td>
<td>As per NCIWRDP 1999</td>
</tr>
<tr>
<td>1.</td>
<td>Indus</td>
<td>321,289</td>
<td>73.31</td>
</tr>
<tr>
<td></td>
<td>Ganga-Brahamputra-Meghna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Basin Ganga</td>
<td>862,769</td>
<td>525.02</td>
</tr>
<tr>
<td>3.</td>
<td>Brahamputra sub-basin</td>
<td>197,316</td>
<td>537.24</td>
</tr>
<tr>
<td>4.</td>
<td>Meghna (Barak) sub-basin</td>
<td>41,157</td>
<td>48.36</td>
</tr>
<tr>
<td>5.</td>
<td>Subarnarekha</td>
<td>29,196</td>
<td>12.37</td>
</tr>
<tr>
<td>7.</td>
<td>Mahanadi</td>
<td>141,589</td>
<td>66.88</td>
</tr>
<tr>
<td>8.</td>
<td>Godavari</td>
<td>312,812</td>
<td>110.54</td>
</tr>
<tr>
<td>9.</td>
<td>Krishna</td>
<td>258,948</td>
<td>78.12</td>
</tr>
<tr>
<td>10.</td>
<td>Pennar</td>
<td>55,213</td>
<td>6.32</td>
</tr>
<tr>
<td>13.</td>
<td>Narmada</td>
<td>98,796</td>
<td>45.64</td>
</tr>
<tr>
<td>14.</td>
<td>Mahi</td>
<td>34,842</td>
<td>11.02</td>
</tr>
<tr>
<td>15.</td>
<td>Sabarmati</td>
<td>21,674</td>
<td>3.81</td>
</tr>
<tr>
<td>16.</td>
<td>West flowing rivers of Kutch and Saurastra including Luni</td>
<td>334,390</td>
<td>15.10</td>
</tr>
<tr>
<td>17.</td>
<td>West flowing rivers south of Tapi</td>
<td>113,057</td>
<td>200.94</td>
</tr>
<tr>
<td>18.</td>
<td>East flowing rivers between Mahanadi and Godavari</td>
<td>49,570</td>
<td>17.08</td>
</tr>
<tr>
<td>19.</td>
<td>East flowing rivers between Godavari and Krishna</td>
<td>12,289</td>
<td>1.81</td>
</tr>
<tr>
<td>22.</td>
<td>East flowing rivers south of Cauvery</td>
<td>35,026</td>
<td>6.48</td>
</tr>
<tr>
<td>23.</td>
<td>Area of North Ladakh not draining into Indus</td>
<td>28,478</td>
<td>0</td>
</tr>
<tr>
<td>24.</td>
<td>Rivers draining into Bangladesh</td>
<td>10,031</td>
<td>8.57</td>
</tr>
<tr>
<td>25.</td>
<td>Rivers draining into Myanmar</td>
<td>26,278</td>
<td>22.43</td>
</tr>
<tr>
<td>26.</td>
<td>Drainage areas of Andman, Nicobar and Lakshadweep Islands</td>
<td>8,280</td>
<td>0</td>
</tr>
<tr>
<td>27.</td>
<td>Total</td>
<td>3,287,260</td>
<td>1,869.37</td>
</tr>
<tr>
<td>28.</td>
<td>Approximately Say</td>
<td>-</td>
<td>1870</td>
</tr>
</tbody>
</table>

Total surface water resources of the country (yearly average streams flow) are about 1,869 km³. Due to uneven distribution of rainfall, both spatial and temporal, only 37% (690 km³) of the surface renewable water resources are estimated to be potentially utilizable. This low proportion is primarily due to low potentially utilizable water resources in the Meghna – Brahamputra river basins. The Brahamputra River covers only 7.6% of the geographical area, accounting of 31% of the total renewable water resources. According to Central water Commission, potential utilizable for India are 690 km³ of the surface water and 432 km³ of the ground water (total 1,122 km³ or BCM).
**Water demand**

Country’s water demand is dominated by irrigation needs. The total water demand for agriculture, domestic and industrial sectors of India in 1995 was estimated to be about 650 km³; of this about 90% is withdrawn for agriculture sector. Different demand scenarios up to year 2050 AD have been estimated by the ministry of Water resources and the demands as projected for different years are given in Table 5. There will be a large gap even at the aggregate level between the water availability and requirement by 2050 AD, when the population of the country is expected to stabilize. The entire replenishable ground water is also assumed to be utilized by 2025 AD. Therefore, to bridge the gap between water availability and requirement, inter-basin water transfers by inter-linking of rivers may be a viable alternative, which would also take care of the requirement of the water short areas, including drought prone areas.

**Irrigation demand**

Irrigation demand of a region depends upon the areas irrigated with surface water and ground water, different crop water requirements and irrigation application efficiency. Irrigation demands may be worked out as:

\[ \text{Irrigation demands } = \text{Crop water requirement} \times \text{Surface irrigation efficiency} + \text{Ground water irrigation efficiency} \]

The irrigation demand ranges from 193 m³ per person in Brahmaputra basin to 1,617 m³ per person in Indus basin. Irrigation efficiencies range from a low of 31% whereas most of the area is surface irrigated to a high of 62% (where most of the area is irrigated from ground water). Irrigation is the largest sector of water demand and irrigated agriculture shall further be called upon to produce a sizable portion of the food grains requirements for the growing population. Considering the rapid changes in the dietary habits and standard of living of the Indian population, it may be difficult to make correct estimates for future food grain requirements. Based on the different scenarios of food grain requirements estimates of irrigation water requirements have been given below in Table 6.

**Table 5. Estimates of future water demands (BCM) under different scenarios**

<table>
<thead>
<tr>
<th>Category</th>
<th>Year 2010</th>
<th>Year 2025</th>
<th>Year 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Irrigation</td>
<td>489.0</td>
<td>536.0</td>
<td>556</td>
</tr>
<tr>
<td>Domestic</td>
<td>39.4</td>
<td>41.6</td>
<td>61</td>
</tr>
<tr>
<td>Industrial</td>
<td>37.0</td>
<td>37.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Total</td>
<td>555.4</td>
<td>614.6</td>
<td>654</td>
</tr>
</tbody>
</table>

**Table 6. Future food grains and water demands for irrigation under different scenarios**

<table>
<thead>
<tr>
<th>Year</th>
<th>Low demand scenario (Mt)</th>
<th>Water requirement (BCM)</th>
<th>Medium demand scenario (Mt)</th>
<th>Water requirement (BCM)</th>
<th>High demand scenario (Mt)</th>
<th>Water demand (BCM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>249</td>
<td>489</td>
<td>265</td>
<td>536</td>
<td>271</td>
<td>556</td>
</tr>
<tr>
<td>2025</td>
<td>322</td>
<td>619</td>
<td>349</td>
<td>686</td>
<td>365</td>
<td>734</td>
</tr>
<tr>
<td>2050</td>
<td>469</td>
<td>830</td>
<td>539</td>
<td>1,008</td>
<td>605</td>
<td>1,191</td>
</tr>
</tbody>
</table>
Irrigation

Irrigation is the artificial application of water to partially meet the crop evapo-transpiration requirements. It is essential for sustaining crop productivity in many regions of the country mainly because the rainfall is inadequate and unevenly distributed to meet crop water demands. Irrigation water is a costly and scarce input, and it is becoming more difficult to increase the area under irrigation to meet the demand for food, fodder and fiber for growing human and livestock population. The competing demands of water for other uses viz. urbanization and industrialization are also restricting the availability of water for crop production. Therefore, it is essential to optimize the use of water according to availability on sustainable basis in the decline water table areas, and to allow minimum loss of water by efficient water management techniques in areas where water table is continuously rising.

Irrigation requirements of some important crops

Irrigation requirement at the field level refers to the amount of water, exclusive of precipitation, required to mature the crops (Table 7). It is usually expressed in depth at the given time. It thus, includes the amount of water needed to meet the losses through evaporation and transpiration, both occurring simultaneously and hence termed evapo-transpiration (ET), application losses and the special needs. It does not include transit losses.

Problems in irrigation

1. Competition for surface water rights.
2. Depletion of underground aquifers.
3. Ground subsidence
4. Under-irrigation gives poor salinity control which leads to increased soil salinity with consequent build up of toxic salts on soil surface in areas with high evaporation. This requires either leaching to remove these salts and a method of drainage to carry the salts away or use of mulch to minimize evaporation.
5. Over-irrigation because of poor distribution uniformity or management wastes water, chemicals, and may lead to water pollution.
6. Deep drainage (from over-irrigation) may result in rising water tables which in some instances will lead to problems of irrigation salinity.
7. Irrigation with saline or high-sodium water may damage soil structure.

The central government initiated the Accelerated Irrigation Benefit Programme (AIBP) from 1996-97 for extending assistance for the completion of incomplete irrigation schemes. Under this programme, projects approved by the Planning

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Crops (Kharif)</th>
<th>Crop duration (days)</th>
<th>Irrigation requirement (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Rice</td>
<td>130-140</td>
<td>700-800</td>
</tr>
<tr>
<td>2.</td>
<td>Sorghu</td>
<td>110</td>
<td>150</td>
</tr>
<tr>
<td>3.</td>
<td>Maize</td>
<td>110</td>
<td>150</td>
</tr>
<tr>
<td>4.</td>
<td>Sugarcane</td>
<td>330</td>
<td>700</td>
</tr>
<tr>
<td>5.</td>
<td>Summer pulses</td>
<td>70</td>
<td>210</td>
</tr>
<tr>
<td>6.</td>
<td>Pearl millet</td>
<td>90</td>
<td>150</td>
</tr>
<tr>
<td>7.</td>
<td>Sunflower</td>
<td>110</td>
<td>210</td>
</tr>
<tr>
<td>8.</td>
<td>Cotton</td>
<td>180</td>
<td>280</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Crops (Rabi)</th>
<th>Crop duration (days)</th>
<th>Irrigation requirement (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>Wheat</td>
<td>135</td>
<td>350</td>
</tr>
<tr>
<td>11.</td>
<td>Berseem</td>
<td>200</td>
<td>800</td>
</tr>
<tr>
<td>12.</td>
<td>Potato</td>
<td>110</td>
<td>450</td>
</tr>
<tr>
<td>13.</td>
<td>Lentil</td>
<td>135</td>
<td>150</td>
</tr>
<tr>
<td>14.</td>
<td>Mustard</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>15.</td>
<td>Barley</td>
<td>125</td>
<td>210</td>
</tr>
<tr>
<td>16.</td>
<td>Soybean</td>
<td>90</td>
<td>350</td>
</tr>
<tr>
<td>17.</td>
<td>Chickpea</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>
Commission are eligible for assistance. Under the AIBP, Rs 50,380.64 crore of central loan assistance (CLA)/grant has been released up to 30 November 2011. As on 31 March 2011, 290 projects were covered under the AIBP and 134 completed. During 2010-11, an irrigation potential of 566.24 thousand ha is reported to have been created by states, from major / medium / minor irrigation projects under the AIBP. While the higher irrigation potential would help augment production and productivity, assured remuneration from such production is vital for development of agriculture. The Government has also been creating irrigation potential through public funding and assisting farmers to create potential on their own farms. Substantial irrigation potential has been created through major, medium and minor irrigation schemes. The total irrigation potential in the country has increased from 81.1 million ha in 1991-92 to 102.8 million ha in 2006-07. The potential created so far is estimated to be 73.5 per cent of the ultimate irrigation potential (Table 8). Of the total potential created, however, only 87.2 million ha (84.9 per cent) is actually utilized.

The pace of creation of additional irrigation potential came down sharply from an average of about 3 per cent per annum during 1950-51—1989-90 to 1.2 per cent, 1.7 per cent and 1.8 per cent per annum, respectively, during the Eighth, Ninth and Tenth Five Year Plan periods. The rate of growth of utilization of the potential created declined to 1 per cent per annum during the Ninth Five Year Plan period and improved to 1.5 per cent per annum during the Tenth Five Year Plan period. The average annual rate of utilization remained lower than the average annual addition to the irrigation potential resulting in the cumulative utilization witnessing continuous erosion. This not only amounts to an inefficient use of funds, but also a forgone income from irrigated lands.

Responding to the continuous decline in the rate of creation in irrigation potential, the Central Government initiated the Accelerated Irrigation Benefit Programme (AIBP) from 1996-97 for extending assistance in completion of irrigation schemes which had remained incomplete (Table 9). Under this programme, the projects approved by the Planning Commission were eligible for assistance. Further, the assistance, which was entirely a loan from the Centre in the beginning, was modified with inclusion of a grant component from 2004-05. The AIBP guidelines were further modified in December 2006 to provide for 90 per cent of the project cost as grant to special category States, DPAP/Tribal areas and KBK (Koraput, Bolangir and Kalahandi) districts of Orissa.

Table 8. Irrigation potential created and utilized (million ha)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eighth Plan</td>
<td>Ninth Plan</td>
<td>Tenth Plan</td>
<td>Eighth Plan</td>
<td>Ninth Plan</td>
</tr>
<tr>
<td><strong>Cumulative potential created (million ha)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major and medium</td>
<td>30.7</td>
<td>33.0</td>
<td>37.1</td>
<td>42.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Minor</td>
<td>50.4</td>
<td>53.3</td>
<td>56.9</td>
<td>60.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>81.1</td>
<td>86.3</td>
<td>94.0</td>
<td>102.8</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Cumulative potential utilized (million ha)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major and medium</td>
<td>26.3</td>
<td>28.4</td>
<td>31.0</td>
<td>34.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Minor</td>
<td>46.5</td>
<td>48.8</td>
<td>50.0</td>
<td>52.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>72.9</td>
<td>77.2</td>
<td>81.0</td>
<td>87.2</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Per cent utilization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major and medium</td>
<td>85.6</td>
<td>86.3</td>
<td>83.7</td>
<td>81.3</td>
<td>-</td>
</tr>
<tr>
<td>Minor</td>
<td>92.4</td>
<td>91.5</td>
<td>87.9</td>
<td>87.4</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>89.8</td>
<td>89.5</td>
<td>86.2</td>
<td>84.9</td>
<td>-</td>
</tr>
</tbody>
</table>
Under AIBP, the State Governments were provided Rs. 24,867.4 crore as CLA/grant for 229 major/medium Irrigation projects and 6,205 Surface Minor Irrigation (MI) Schemes up to January 29, 2008. So far 91 major/medium and 4,605 Surface Mi Schemes have been completed. In the current year, as on January 29, 2008, Rs. 3,127.5 crore has been released for AIBP.

To cover a larger area under irrigation, the Government sanctioned a National Project for Repair, Renovation and Restoration of Water Bodies directly linked to agriculture, in January 2005 with an estimated cost of Rs. 300 crore to be shared by the Centre and States in 3:1 ratio. The water bodies having cultivated command area of more than one ha and up to 2,000 ha were included under the pilot scheme in one or two districts in each State. The scheme was approved for 26 districts in 15 States. Central share of Rs. 179.3 crore has been released to the States till November 30, 2007, covering 1,098 water bodies. The physical work for restoration has been completed for 733 water bodies and the work is in progress in the remaining 365 water bodies.

Table 9. Performance of AIBP Projects (Rs. crore and area thousand ha)

<table>
<thead>
<tr>
<th>Year</th>
<th>Central loan assistant / grant released</th>
<th>Total potential created under AIBP</th>
<th>Total potential created</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-97</td>
<td>500.0</td>
<td>74.5</td>
<td>560.0</td>
</tr>
<tr>
<td>1997-98</td>
<td>952.2</td>
<td>182.0</td>
<td>645.2</td>
</tr>
<tr>
<td>1998-99</td>
<td>1,119.2</td>
<td>259.0</td>
<td>592.2</td>
</tr>
<tr>
<td>1999-2000</td>
<td>1,450.5</td>
<td>223.2</td>
<td>666.0</td>
</tr>
<tr>
<td>2000-01</td>
<td>1,856.2</td>
<td>528.8</td>
<td>983.5</td>
</tr>
<tr>
<td>2001-02</td>
<td>2,602.0</td>
<td>442.8</td>
<td>1,214.6</td>
</tr>
<tr>
<td>2002-03</td>
<td>3,061.7</td>
<td>456.0</td>
<td>812.0</td>
</tr>
<tr>
<td>2003-04</td>
<td>3,128.5</td>
<td>447.0</td>
<td>1,004.0</td>
</tr>
<tr>
<td>2004-05</td>
<td>2,867.3</td>
<td>496.0</td>
<td>1,000.0</td>
</tr>
<tr>
<td>2005-06</td>
<td>1,900.3</td>
<td>600.0</td>
<td>1,500.0</td>
</tr>
<tr>
<td>2006-07</td>
<td>2,302.0</td>
<td>932.0</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>21,739.9</td>
<td>4,641.3</td>
<td>-</td>
</tr>
</tbody>
</table>

*Estimated

Irrigation is one of the six components for the development of rural infrastructure under the *Bharat Nirman* and aims at creating the more irrigation potential in the coming time to mitigate the drought situations whenever it is being experienced and increased agricultural production to feed the burgeoning population in India.

[Dr. Yashbir Singh Shivay is Principal Scientist, Division of Agronomy, Indian Agricultural Research Institute, New Delhi 110 012, E-mail: ysshivay@hotmail.com; and Dr. Anshu Rahal, Assistant Professor, Department of Animal Nutrition, College of Veterinary and Animal Sciences, Govind Ballabh Pant University of Agriculture & Technology, Pantnagar 263 145, Uttarakhand]
The development of rural India is vital for inclusive and equitable growth and unleashing of huge potentials of the population currently trapped in poverty coupled with other social deprivations. Research suggests that the incidence of rural poverty across Indian States indicates that the presence of this crucial social problem is very closely linked to the absence of proper rural infrastructure. Bharat Nirman emerged as an answer from the government, designed exclusively for creation of sustainable and durable rural infrastructure. It is a time-bound comprehensive initiative implemented by the Government of India in order to ensure basic infrastructural amenities across villages and thereby bridging the urban-rural divide in terms of infrastructure access. The objective of Bharat Nirman has been to impart a sense of urgency to create rural infrastructure by setting up time-bound approaches under different initiatives like Pradhan Mantri Gram Sadak Yojna (PMGY), Indira Awaas Yojana (IAY), Accelerated Rural Water Supply Programme (ARWSP) etc. The Programme imposes a responsibility on the State to create these facilities in a transparent and accountable manner and these investments under Bharat Nirman for building rural infrastructure will unlock the growth potential of rural India.
Achievements of Bharat Nirman at glance from 2005-06 to 2009-10

<table>
<thead>
<tr>
<th>Components</th>
<th>Target Variables</th>
<th>Overall Achievement [in-percentage]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upgradation</td>
<td>93.35</td>
</tr>
<tr>
<td></td>
<td>Coverage Habitation</td>
<td>58.74</td>
</tr>
<tr>
<td>Housing: Indira Awaas Yojana IAY [2006-07 to 2009-10]</td>
<td>Houses constructed for rural BPL families</td>
<td>60</td>
</tr>
<tr>
<td>Telecommunication: Village Public Phones</td>
<td>Villages Covered</td>
<td>92.5</td>
</tr>
<tr>
<td>Irrigation : Accelerated Irrigation Benefit Programme [AIBP]</td>
<td>Irrigation Potential</td>
<td>73.0</td>
</tr>
<tr>
<td>Drinking Water: Accelerated Rural Water Supply Programme [ARWSP]</td>
<td>Un-covered Habitations</td>
<td>98.86</td>
</tr>
<tr>
<td></td>
<td>Slipped Back Habitations</td>
<td>108.07</td>
</tr>
<tr>
<td></td>
<td>Quality Effected Habitations</td>
<td>142.85</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>119.73</td>
</tr>
<tr>
<td>Power: Rajiv Gandhi Grameen Vidyutikaran Yojana: [RGGVY]</td>
<td>Electrification of Un/De-Electrified Villages</td>
<td>61.9</td>
</tr>
<tr>
<td></td>
<td>Intensive Electrification</td>
<td>29.7</td>
</tr>
<tr>
<td></td>
<td>Rural Households</td>
<td>25.7</td>
</tr>
<tr>
<td></td>
<td>Below Poverty Line Households</td>
<td>38.4</td>
</tr>
</tbody>
</table>

Source: Lalwani [2010] Economic and Political Weekly

Bharat Nirman: Intensifying Effort towards Achieving Millennium Development Goals (MDGs) Targets for Rural India

Bharat Nirman has appeared to be a key player boosting rural India’s journey towards achievement of MDG-targets. Some of the key goals addressed by this programme may be enumerated as follows:

1. **Poverty and Hunger Reduction**- Studies by Planning Commission have revealed that inadequate rural infrastructure has been instrumental in accelerating the growth of rural poverty; and poor purchasing power among rural population ultimately leads to widespread hunger and food insecurity across rural India. Under Bharat Nirman - a major impetus towards need based development of rural infrastructure and focus on irrigation has shown some tangible changes in this direction.

2. **Universalisation of Primary Education**- Infrastructure has been a major barrier in access to education across rural India. Under Bharat Nirman, electricity, accessible roads and safe drinking water provisions have been promoted. This has encouraged more and more children and youth specially girls to come forward and avail educational facilities across the county.

3. **Health Related Goals: Goal 4,5 and 6 [Reducing Child & Maternal Mortality; Combating Diseases]**- Provisioning of safe drinking water and facilitating water supply in under-served areas is appearing to be a boon for boosting the health related goals under Millennium Commitments - be it child or maternal health and fighting diseases like HIV. Studies by developmental organizations like WHO and Water- Aid have brought into light that at any given point of time 20% of people around the world are effected by water borne diseases. Hence access to clean and safe drinking water under Bharat Nirman has been a positive initiative towards this direction. Accessibility to roads have helped in promoting institutional delivery across rural India reducing percentage of maternal and child mortality to a considerable number.

4. **Ensuring Environment Sustainability**- Safe and adequate water supply has promoted hygienic sanitation practices across rural India. This has created a positive impact on environment sustainability.
Facing The Ground Reality : The Task Ahead

Research studies shows that gaps in implementing and monitoring of the programme affected delivery to the beneficiaries. Keeping in view the broad coverage of the programme, the current flow of implementation of rural infrastructure should be kept uninterrupted so as to bring considerable developmental outcomes across the country. Following are the few strategies that can be followed for ensuring greater reachability of the programme.

1. **Promoting Public-Private Partnership in Infrastructure Building** – Development of Infrastructure is the sole objective of this programme. This can be further boosted by encouraging appropriate public-private partnership. Since the financial resource of the government is limited, private investments in the sector will increase fund-flow and will help reach the targets of Bharat Nirman.

2. **Setting area-specific targets** – Requirement of every rural area is unique and different. Sectoral allocation of resources could be an important step so that resources are well utilized. Therefore steps can be taken to identify area specific needs in collaboration with local Panchayats of the area. Chalking out essential requirements will help in providing effective intervention and reduce wastage of resources under this programme.

3. **Initiating suitable measures/mechanisms for regular monitoring and evaluation at the grassroots level** - Every programme and scheme implemented across the country appears to very effective in pen and papers; however there are gaps in implementation due to limitations in every region. Suitable monitoring mechanisms could be formulated so that every scheme under the programme could be evaluated, role of stakeholders can be re-analyzed and the programme can be upgraded and implemented in a better way.

4. **Reducing the inequality in Regional growth** - Generally it is observed that compared to mainstream area development, many backward areas like the North-East are often left devoid of development. Steps should be taken so that this regional balance in development can be reduced and a holistic approach should be adopted.

5. **Encouraging role of civil society institutions** - Civil Societies can be involved in different aspects of programme implementation. They can play a supportive role to panchayati raj institutions like for example- need based monitoring, follow up which may be instrumental in further upgradation of the programme.

6. **Proper utilization of community resources under Bharat Nirman Plan** - Keeping in view the financial and human resources of the Government, steps should be taken so that different community level resources are utilized at different stages of programme implementation.

7. **Capacity building and training of Panchayat officials** – Panchayat and other government representatives specially the newly elected leaders, women leaders should be provided adequate training from time to time to ensure better performance as they are the key players at the grassroots level for implementation of the programme. The members should be provided suitable orientation regarding proper usage of Participatory Rural Appraisal (PRA) and Participatory Learning and Action (PLA) while allocating resource for identification of rural infrastructure needs.

8. **Encouraging more autonomy to Gram Sabha for a transparent planning at the village level** - Being the executing unit of Gram Panchayat; Gram Sabha should be given more autonomy in designing the layout of different initiatives under Bharat Nirman. Autonomous functioning of Gram Sabha will boost up peoples participation promoting stakeholdership in the programme.

The infrastructure sector has both backward and forward linkages with the agricultural and the industrial sectors and therefore the development of this sector is a prerequisite for the overall development of the economy. Infrastructure, in general, and rural infrastructure in particular, contributes to economic development both by increasing productivity and by providing amenities which enhance the quality of life. The problem of inadequate infrastructure in rural areas can also be interpreted in terms of access rather than availability of services. Bharat Nirman with its time-bound integrated approach can help build sustainable infrastructure which will help in asset creation for the Nation as well as to bridge the urban-rural divide in the context development.

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The health care infrastructure in rural areas in India has been developed as a three-tier system and is based on the population norms.

The health care system and infrastructure in India, at present, has been developed as a three-tier structure to provide health care services to the people. The first tier, known as primary tier, has been developed to provide health care services to the vast majority of rural people. The primary tier comprises three types of health care institutions: Sub Centre (SC), Primary Health Centre (PHC) and Community Health Centre (CHC). The rural health care infrastructure has been developed to provide primary health care services through a network of integrated health and family welfare delivery system.

Rural Health Care System and Infrastructure:

Rural health care institutions are established and maintained by the state governments out of funds provided to them by the central government under the Minimum Needs Programmes / Basic Minimum Services Programmes. The health care infrastructure in rural areas in India has been developed as a three-tier system and is based on the population norms.

Sub Centres (SC):

The sub-centre is the most peripheral health unit and first contact point between the primary health care system and the community. (National norms of population coverage: 5000 in plain area and 3000 in hilly / tribal area). Each sub-centre has one female health worker / ANM (Auxiliary Nurse Midwife) and one male health worker. One female health assistant (Lady Health Visitor LHV) and one male health assistant supervise six sub-centers. Sub-centres are assigned tasks relating to interpersonal communication in order
to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes. The sub-centres are provided with basic drugs for minor ailments needed for taking care of essential health needs of men, women and children. The Government of India is providing 100 percent central assistance to all sub-centres in the country since April 2002 in the form of salaries of ANMs and LHV and rent of buildings.

Number of sub centres existing in the country has increased from 146026 in 2005 to 148124 in 2011. There is significant increase in the number of sub centres in the states of Chhattisgarh, Haryana, Jammu & Kashmir, Karnataka, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura and Uttarakhand. NRHM has proposed strengthening of sub-centres in the form of provision of untied fund of Rs10,000 per annum. This fund to be utilized for local needs and maintenance of sub-centres. The units will also be provided with essential drugs, both allopathic and AYUSH.

**Primary Health Centre (PHC):**

PHCs are the cornerstone of rural health services- a first port of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from sub-centres for curative, preventive and promotive health care. It acts as a referral unit for 6 SCs. They are manned by a Medical officer supported by 14 paramedical and other staff. It has 4-6 beds for patients. (National norms of population coverage: 30,000 in plain area and 20,000 in hilly / tribal area).

At the national level, there is an increase of 651 PHCs in 2011 as compared to that existed in 2005. There are 23887 PHCs functioning as on March 2011 in the country. Significant increase is observed in the number of PHCs in the states of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Jammu & Kashmir, Karnataka, Maharashtra, Nagaland, Uttar Pradesh and West Bengal.

NRHM aims to strengthen services at CHCs by operationalising 100 percent CHCs as 24 hour First Referral Units (FRUs), including posting of anesthetists. New public health standards have been formulated for all cadres of primary health care functioning units including CHCs. The objectives of these public health standards are essentially to provide optimal expert care to the community; to achieve and maintain an acceptable standard of quality of care; to make the services more responsive and sensitive to the needs of the community. A set of assured service package is provided to population. An additional public health programme manager posting is recommended on contractual basis at all CHCs for supervising surveillance operations; coordination of national health programmes; management of ASHAs etc. A standard set of essential drugs and equipment is enlisted at CHCs level. Quality assurance is envisaged in delivery of health care in atleast 50 percent PHCs by addressing shortage of doctors, especially in high focus states, through mainstreaming AYUSH manpower and observance of standard treatment guidelines and protocols. Intensification of ongoing communicable disease control programmes, new programmes for control of non-communicable diseases, upgradation of 100 percent PHCs for 24 hour referral service, and provision of second doctor at PHC level (1 male, 1 female) to be undertaken on the basis of felt need.

**Community Health Centre (CHC):**

It serves as a referral centre for 4 PHCs. It has 30 indoor beds with one OT, X-Ray, labour room and laboratory facilities. (National norms of population coverage: 120,000 in plain area and 80,000 in hilly / tribal area). It serves as a referral centre for 4 PHCs and also provides facilities for obstetric care and specialist consultations. At the national level there is an increase of 1463 CHCs in 2011 as compared to that existed in 2005. As on March 2011, there are 4809 CHCs functioning in the country. Significant increase is observed in the number of CHCs in the states of Arunachal Pradesh, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Punjab, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.
and is recommended that every CHC to have the charter of patient rights prominently displayed at entrance of CHCs.

**Building Status:**

As on March, 2011, 62.7 percent of sub-centres, 86.7 percent of PHCs and 95.3 percent of CHCs are located in the government buildings. The rest are located either in rented building or rent free Panchayat/voluntary society buildings. Share of sub-centres functioning in the government buildings has increased from 50 percent in 2005 to 62.7 percent in 2011 mainly due to substantial increase in the government buildings in the states of Assam, Chhattisgarh, Goa, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Punjab, Rajasthan, Sikkim, Tripura, Uttarakhand, Uttar Pradesh and West Bengal. Percentage of PHCs functioning in government buildings has increased significantly from 78 in 2005 to 86.7 in 2011. This is mainly due to increase in the government buildings in the states of Assam, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Nagaland and Uttar Pradesh. The percentage of CHCs in government buildings has increased from 90 in 2005 to 95.3 in 2011.

**National Rural Health Mission (NRHM):**

The National Rural Health Mission (2005-12) seeks to provide effective healthcare to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. These 18 states are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttarakhand and Uttar Pradesh. The Mission is an articulation of the commitment of the government to rise public spending on health from 0.9 percent of GDP to 2-3 percent of GDP.

NRHM aims to undertake architectural correction of the health system to enable it to effectively handle increased allocations as promised under the National Common Minimum Programme and promote policies that strengthen public health management and service delivery in the country. It has as its key components provision of a female health activist in each village; a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat; strengthening of the rural hospital for effective curative care and made measurable and accountable to the community through Indian Public Health Standards (IPHs); integration of vertical Health & Family Welfare Programmes, optimal utilization of funds & infrastructure, and strengthening delivery of primary healthcare. It seeks to revitalize local health traditions and mainstream AyUSH into the public health system. It further aims at effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through a district plan for health. It seeks decentralization of programmes for district management of health and to address the inter-state and inter-district disparities, especially among the 18 high focus states, including unmet needs for public health infrastructure. It also seeks to improve access of rural people, especially poor women and children, to equitable, affordable, accountable and effective primary healthcare.

**Challenges and Remedies:**

To cope up with challenges the need is to get a sound infrastructure and making sure that it has been implemented to perfection. Infrastructure has been described as the economic arteries and veins. Roads, ports, railways, airports, power lines, pipes and wires that enable people, goods, commodities, water, energy and information to move about efficiently. Increasing, infrastructure is regarded as a crucial source of economic competitiveness.

The neglect of rural healthcare system is largely due to lack of specialist doctors in the rural sector. Even the local villagers who study medicine prefer to work in the city rather than going back and working in their own village. The need is to establish much more achievable and a simple health system which can ensure good healthcare of the villagers.

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INDIRA AWAAS YOJANA – FULFILLING THE NEED FOR RURAL HOUSING

Shelter is a basic need of a citizen which is critical for determining the quality of human life. A roof over the head endows a shelterless person, with an essential asset and improves his physical and mental well being. Hence, fulfilling the need for rural housing and tackling housing shortage particularly for the poorest is an important task to be undertaken as part of the poverty alleviation efforts of the Government. The Indira AwaasYojana (IAY) is a flagship scheme of the Ministry of Rural Development. Under the scheme, financial assistance is provided to the Below Poverty Line (BPL) households in the rural areas for construction of dwelling units. It has been in operation since 1985-86.

The funding of IAY is shared between the Centre and States in the ratio of 75:25. In the case of Union Territories, entire funds of IAY are provided by the Centre. In case of North East States, the funding ratio between the Centre and States is 90:10. The ceiling on construction assistance under IAY is Rs. 45,000 per unit in the plain areas and Rs. 48,500 in hilly/difficult areas/IAP districts. For upgradation of kutcha house, the financial assistance is Rs. 15,000 per unit. In addition to the unit assistance availed, a beneficiary can also borrow a top-up loan upto Rs. 20,000/- from any nationalized Bank at 4% interest per annum under Differential Rate of Interest (DRI) Scheme.

The criteria for allocation of IAY funds to the States and UTs involve assigning 75% weightage to housing shortage and 25% to poverty ratio. The allocation amongst districts is based on 75% weightage to housing shortage and 25% weightage to SC/ST component. Further, 60% of the IAY allocation is meant for benefiting SC/ST families, 3% for physically handicapped and 15% for minorities. Also the IAY houses are expected to be invariably allotted in the name of women. In addition, 5% of the central allocation can be utilized for meeting exigencies arising out of natural calamities and other emergent situations like riot, arson, fire, rehabilitation etc.

In order to introduce transparency in selection of beneficiaries, permanent IAY waitlists have to be prepared gram panchayat wise by the States/UTs. These lists contain the name of deserving BPL families who need IAY houses in order of their poverty status based on the BPL list 2002. Gram Sabha select the beneficiaries from the list of eligible BPL households/Permanent IAY waitlist wherever it has been prepared.
Construction of an IAY house is the sole responsibility of the beneficiary. Engagement of contractors is prohibited and no specific type, design has been stipulated for an IAY house. However, sanitary latrine and smokless chullah are required to be constructed along with each IAY house. For construction of a sanitary latrine, the beneficiary can avail of financial assistance as admissible under the Total Sanitation Campaign (TSC).

**Bharat Nirman Programme**

Rural Housing is one of the six components of Bharat Nirman Programme. Under Bharat Nirman Programme Phase-I, 60 lakh houses were envisaged to be constructed through Indira Awaas Yojana all over the country during the four years i.e. from 2005-06 to 2008-2009. Against this target, 71.76 lakh houses were constructed with an expenditure of Rs. 21720.39 crore. The target for the next five years period starting from the year 2009-10, has been doubled to 120 lakh houses.

During the last three years of the Bharat Nirman Programme Period - Phase - II, approximate 85 lakh houses have already been constructed. Since inception of the IAY scheme about 286.88 lakh houses have been constructed with an expenditure of Rs. 85141.13 crore.

**Convergence of Various Centrally Sponsored Schemes with IAY**

Under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) each IAY beneficiary can get a free electricity connection to his house, under Total Sanitation Campaign (TSC) an IAY beneficiary who will construct a sanitary latrine can get TSC funds in addition to the unit assistance he has got under IAY, all willing IAY beneficiaries can get the benefits available under Janshree Bima and Aam Aadmi Bima policies, under DRI, an IAY beneficiary can borrow up to Rs. 20,000/- from any Nationalized Bank at 4% interest per annum to top up the unit assistance he has got under IAY.

**Allotment of Homestead Plot**

A scheme was launched on 24th August, 2009 as part of IAY, for providing homestead sites to those rural BPL households whose names are included in the permanent IAY waitlists but who have neither agricultural land nor a house site. Since inception of the scheme, funds amounting to Rs. 347.46 crore have been released to States namely Bihar, Andhra Pradesh, Karnataka, Kerala, Rajasthan, Sikkim, Uttar Pradesh and Maharashtra for purchase of land and Rs. 1367.31 crore have been released to Karnataka, Gujarat, Rajasthan, Tripura, Madhya Pradesh, Chhattisgarh, West Bengal, Rajasthan, Maharashtra and Jharkand as incentive for additional houses for providing homestead sites.

**Monitoring Mechanism**

The Indira Awaas Yojana is being continuously reviewed through Monthly and Annual Reports received from the States/UTs. Senior officers at the level of Deputy Secretaries and above in the Ministry are appointed as Area Officers for different States/UTs. These Area Officers visit the allotted States/UTs from time to time and inspect the actual implementation of the programme in the field. They also participate in the State Level Coordination Committee Meetings providing thereby, a source of effective link between the policy makers, i.e., the Government and the implementing agencies (States/UT Governments). The programme is also reviewed at the meeting with the State Secretaries of Rural Development and with the Project Directors of DRDAs in the workshops held every year. From April 2007 onwards, an online monitoring mechanism has been put in place to enable DRDAs to upload their monthly progress reports into the website of the Ministry.

The web-based local language MIS Programme ‘AWAASsoft’ was launched, this software captures beneficiary-wise data and is accessible to all the stake holders, beneficiaries and citizens at large.

During the last year 2011-12, Rs. 9991.20 crore (including Rs. 500.00 crore for Homestead Component) were allocated for Rural Housing for construction of 27.27 lakh houses under Indira Awaas Yojana, against the physical target of construction of 27.27 lakh houses, 24.66 lakh houses were constructed after utilization of Rs. 12814.88 crore and 26.95 lakh houses were under construction.

In the current financial year 2012-13, the total budgetary outlay for Rural Housing is Rs. 11075.00 crore. Out of which Rs. 10513.20 crore has been earmarked under Indira Awaas Yojana (IAY) for construction of 30.09 lakh houses and Rs. 553.00 crore for Homestead Component. Rs. 4783.70 crore has already been released as first installment of funds. Against the physical target, 3.83 lakh houses have been constructed so far.

[Inputs from the Department of Rural Development, Ministry of Rural Development]
Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) which reflects this vision was launched in April 2005 so that rural and urban India could become one in their expression of developed India. RGGVY envisages inclusive growth for the nation by bridging the rural-urban divide. The programme aims at developing the rural electricity infrastructure and household electrification to provide access to electricity to all rural households. For this programme, electricity is not just a medium to lighten the villages but also a tool to enlighten the minds and souls of rural population by helping them come out of darkness, low levels of development, low literacy levels and non-availability of basic facilities.

As per 2001 census, 1.19 lakh villages and 7.80 crore households were un-electrified in the country. A large portion of population was still living in darkness. It was in this background that the RGGVY was launched with the objectives of electrifying all villages and habitations; providing access to electricity to all rural households; and providing electricity connection to Below Poverty Line families free of charge.

Under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), 576 projects targeting to electrify 1.10 lakh un/de-electrified villages and intensive electrification of 3,48,987 partially electrified villages have been sanctioned in the country. In addition thirty three projects in 33 districts have also been sanctioned under Phase-II of the RGGVY. Further, thirty six supplementary projects have also been sanctioned under Phase-II. The Bharat Nirman target of electrification of 1 lac unelectrified villages and providing free electric connection to 1.75 crore BPL households has already been exceeded by achievement of electrification of 1,03,611 villages and 1.91 crore BPL households as on 22 March, 2012. Under the scheme, besides electrification of un-electrified BPL households financed with 100% capital subsidy as per norms of Kutir Jyoti Programme, provision also exists to provide access to APL households, who are required to pay for their electricity connection at prescribed connection charges for obtaining household connections. Ministry of New and Renewable Energy is implementing Remote Village Electrification Programme for providing financial support for lighting/ basic electrification in those remote un-electrified census villages and un-electrified hamlets of electrified census villages where grid extension is not found feasible by the State Governments and are not covered under the RGGVY.

The implementation process of the scheme involves preparing a district based detailed project report for execution on turnkey basis. Then Central Public Sector Undertakings are involved in the implementation. Gram Panchayat is involved in the certification of an electrified village.

The infrastructure under RGGVY includes Rural Electricity Distribution Backbone (REDB) with 33/11 kV (or 66/11 kV) substations of adequate capacity and lines to be established in blocks where these do not exist; Village Electrification Infrastructure (VEI) which involves electrification of un-electrified villages and habitations. There is a provision of Distribution Transformer of appropriate capacity in villages or habitations; and Decentralized Distributed Generation (DDG) based on conventional and non-conventional energy sources where grid supply is not feasible or cost effective.

Under RGGVY electric connections are also provided to un-electrified public places like schools, panchayat offices, community / health care centres, dispensaries, etc. Providing power to rural areas means all round development of these areas by promoting education, health care facilities, computerisation, telecommunication, online access to land records and access to new technology in agriculture. Moreover, Khadi and village industries also get a boost with the access of electricity. RGGVY, thus, acts as a means of social and economic inclusion in the rural Indian society. The scheme is helping in creating rural employment and slowing down the rate of migration to urban areas. Here is what the villagers of Golaghat district of Assam said about how the scheme transformed their lives:

"Attacks by wild animals were common in my village. Before the electrification, we used to spend the nights in fear. Elephants would destroy houses and tigers would kill cows and goats. After the electrification attacks by wild animals are rare as the lights keep them away."............

An old lady from village Halowa NC, Kaziranga “Now our children can study in the evening and I can work in the kitchen even late in the nights.”............A housewife from village Haatikhuli

“Earlier villagers had to go to the nearby town just to get mobile phones charged which consumed the whole day... now they can charge it at home. After electricity came, number of mobile connections has also increased many times in my village. I have opened a mobile repair shop and my income has also gone up.”............Ali, Village Rongbong

It has been proposed to continue the RGGVY during the 12th Plan with 90% capital subsidy. During the 12th Plan the scheme will aim to cover all remaining habitations irrespective of population and BPL households. It is also proposed to enhance BPL load from the range of 40-60 Watt to 250 Watt and to provide LED in each BPL household. The 12th Plan also proposes to have a separate new scheme for productive loads, mainly agricultural loads. (PIB Features.)

[The authors are Director (Media & Communication), PIB, and Assistant Director respectively]
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