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Public private partnership (PPP) in infrastructure development of rural India: opportunities and challenges

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Abstract

India's 70 percent of population lives in rural areas and rural infrastructure lays the foundation for development in any country. The basic infrastructure needed in rural areas are- roads, education, health, drinking water supply and sanitation, telecommunication, irrigation and power. But the condition of housing, education and health are still very poor. Many people are uneducated and illiterate. Government has started many programmes for boosting the rural infrastructure development. These programmes did not achieve much success in addressing the infrastructure deficit. Public Private Partnerships (PPP) can supplement the infrastructure deficit as well as sustainable development of rural areas through PPPs projects. It has helped in socio-economic and Infrastructure development in rural areas. This paper highlights the concept of PPP and growth of PPP projects in different sectors in India and also analyzes its opportunities & challenges in rural infrastructure development in India.

Keywords: Union Igbo, Language, Standardization, Development, Twentieth Century.

1. Introduction

The term, "Public Private Partnerships (PPP)" implies a collaborative agreement between public and private sector organization to delivered infrastructure and social services to the society in a clearly defined and specific time frame. In other words, PPP can be seen as shared responsibilities with innovative methods that meet the private sector as a party in the nation building and sustainable development activity and in fostering the delivery of public Infrastructure like means of transportation viz, roads, airports, seaports, railways, etc. and services like health, education, sanitation, portable water, skill development and etc. of supreme quality at an affordable resources through collaboration of public and private sector. Government of India, Ministry of Finance, Department of Economic Affairs, (2007) defines the term, PPP," A partnership between a public sector entity (sponsoring authority) and a private sector entity (a legal entity in which 51% or more of equity is with the private partner/s) for the creation and/or management of infrastructure for public purpose for a specified period of time (concession period) on commercial terms and in which the private partner has been procured through a transparent and open procurement system". Public Private Partnership (PPP) model across the globe in general and within India in particular is gaining huge applauds appreciation and popularity due to its invaluable contribution towards infrastructure development and contribution to the national growth and prosperity. It's also a well-accepted truth and reality that when an economy is deprived and devoid of adequate and optimum infrastructure, it will have a lackluster performance in terms of economic and social growth. For overall growth of a nation, the development of urban infrastructure must be clubbed together with a focus on rural infrastructure as these two together will provide impetus to economic growth on a much faster and sustainable rate. The development of rural infrastructure is very crucial as it helps in developing and bettering the performances of agriculture, agro-industries and overall economic development of rural areas. It also helps in providing basic amenities that goes a long way in improving the quality of life and bringing rural folk at par with the mainstream. In a rapidly growing economy like India, which suffers from paucity of capital, PPP is the most potent and viable option to public funding, by harnessing private sector efficiencies for infrastructure development which traditionally has been the government domain. The linkages between infrastructure and economic growth and poverty alleviation are now a proven fact and that's why the focus is shifting towards more and more use of PPP.

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Good quality infrastructure provides a pace and force to economic growth and also helps in improving economic growth will, in turn, also make investment in infrastructure projects more attractive and rewarding. As per the opinion of the economic experts, India is very sound and self-sufficient on institutional infrastructure but its very fragile on physical infrastructure. The case of rural infrastructure is even worse and it needs immediate attention and need to be built at the earliest so that the contribution of rural economy may be increased. But the challenges before the policy makers as far as rural infrastructure is concerned are huge. Rural infrastructure plays a significant role in fundamental infrastructure development of country. Even today, 70 percent population of India is living in rural areas and a vast majority of the population is still dependent on agriculture for their livelihood. The viability of basic and fundamental infrastructure in rural area is far away. At the time of independence, governments and planning commission initiated various plan for infrastructure development of rural

India. In the First Five Year Plan (FYP), the highest priority was given to agriculture development, including irrigation and power as it was recognized that large areas of the country have remained underdeveloped due to the lack of basic services like transport, communication, irrigation and power. Now, 12th FYP is going on but there is a lack of basic infrastructure, both social and physical, that continues to remain a major constraint in the progress of many villages and their habitations. The anticipated Investment in Infrastructure during the Twelfth Plan encourages private sector participation directly as well as through various forms of PPPs, wherever desirable and feasible. The share of private sector in infrastructure investment will have to rise substantially from about 36.61 per cent anticipated in the Eleventh Plan to about 48 per cent in the Twelfth Plan. It is expected that competition and private investment will not only expand capacity, but also improve the quality of service, besides minimising cost and time overruns in implementation of infrastructure projects.

Projected Investment in Infrastructure—Twelfth Plan

Sectors	Total Eleventh plan	Twelfth Plan Projections					Total Eleventh plan
		2012-13	2013-14	2014-15	2015-16	2016-17	
Grand Total	24,24,277	7,51,012	8,87,454	10,61,316	12,85,573	15,89,308	55,74,663
Centre	8,56,717	2,50,758	2,80,662	3,15,217	3,54,296	4,00,129	16,01,061
States	6,80,056	2,06,944	2,30,045	2,55,645	2,83,201	3,13,928	12,89,762
Private	8,87,504	2,93,310	3,76,747	4,90,455	6,48,077	8,75,251	26,83,840
Grand Total	24,24,277	7,51,012	8,87,454	10,61,316	12,85,573	15,89,308	55,74,663
Public	15,36,773	4,57,702	5,10,707	5,70,862	6,37,497	7,14,057	28,90,823
Private	8,87,504	2,93,310	3,76,747	4,90,455	6,48,077	8,75,251	26,83,840
GDP	3,36,04,450	1,01,50,618	1,16,45,987	1,33,58,028	1,53,47,089	1,76,61,48	6,81,63,208
Investment as % of GDP	7.21	7.40	7.62	7.95	8.38	9.00	8.18

(**Data Source-** Volume I, Twelfth Five Year Plan (2012–2017) Faster, More Inclusive and Sustainable Growth, Planning Commission (Government of India) 2013.

The total public sector investment in infrastructure envisaged in the Twelfth Plan is Rs.16, 01,061 crore by the Centre and Rs.12, 89,762 crore by the States. Investment by the private sector, which includes PPP projects, makes up the balance of Rs.26,83,840 crore, which is 48.14 per cent of the required investment during the Twelfth Plan, a much higher share than the anticipated 36.61 per cent during the Eleventh Plan.

2. Objectives of the Study

The basic objectives of this study are

- To assess the Public Private Partnership (PPP) models and explain the present scenario of PPP projects particularly in infrastructure development sector.
- To analyse various opportunities and challenging issues before Public Private Partnership (PPP) specially with regard to Indian Rural Infrastructure development.

3. Literature Review

(Chambers, 2006), Rural India needs business to invest in industries such as finance and insurance; in ventures that bring new infrastructure such as telephony and roads. This is where telecommunications can help. Where physical infrastructure may not reach easily, the Internet can.

Broadband access is the ideal platform to connect a geographically diverse country such as India. This high-speed Internet technology holds tremendous potential, such as distance learning, telemedicine, supply chain management, customer relationship management. (Desai, 2006), In some cases, even though PPP models allow for exclusive right over public assets, it is free from the evil of monopoly business such as high user charges or low service quality. This happens when government follows competitive bidding process to decide on lowest user charges or provide viability gap funding to safeguard consumer interests. Contracts are designed to ensure service quality. KC Smita & SN Sangita (2008) suggested that the PPP is alternative service delivery model to achieve efficiency and address shortages, although unlikely to replace fully traditional services deliver by governments. And efficiency level of service delivery has improved and shown result in some of the public utilities in area. Mahalingam A (2008) said given India's infrastructure needs, PPPs are a necessity and not just an option. However there are a myriad of issues that need to be addressed and resolved in order to facilitate a better understanding on how to develop infrastructure efficiently and seamlessly via PPPs. N Gopal et al. (2009) in the wake of increasing challenges to deliver quality public services in

developing countries like India, public private partnerships seems to address some of the major problems governments are facing such as investment needs and trained manpower capacity constraints. These services are now increasingly being used by the citizens.

4. Research Methodology

The Present study is based on secondary data. The primary data are drawn through questionnaire, personal interview, telephonic interview and the secondary data are derived from Journals, books, internet and from Government of India official website namely <http://www.pppinindia.com> and this is also the official website of the committee on infrastructure, Planning Commission and Investment Commission of India. The data available on these websites are regularly updated and the website is directly under the control of Ministry of Finance, Government of India.

5. Result & Discussion

On the basis of the findings of my study, the Results of the study can broadly be discussed under the following heads: The results of the study reveal that PPP approach has a very crucial and strong positive influence on infrastructure and sustainable development of country. The influence of carrying out PPP work is positive as it helps in growth and progress of the society in particular and nation in general. The study shows the state level distribution of PPP as under and its impact directly or indirectly on various schemes.

5.1 PPPs Models in infrastructure Sectors

The various PPPs model in Indian states are classified as under:

Degree Of Private Sector Risk	Concession
	Build-Own-Operate
	Design-Build-Finance-Operate-Maintain
	Design-Build –Finance-Operate
	Design-Build-Finance-Maintain
	Design-Build-Operate
	Lease-Develop-Operate
	Build-Finance-Maintain
	Build-Finance
	Operation and Maintenance
Design Build	

Sources: Ghosh and Gope (2011)

Degree of Private Sector Involvement
The Scale of Public –Private Partnerships

They described models like (a) Buy-Build-Operate (BBO), (b) Build-Own-Operate (BOO), (c) Build-Own-Operate-Transfer (BOOT), (d) Build-Operate-Transfer (BOT), (e) Build-Lease-Operate-Transfer (BLOT), (f) Design-Build-Finance-Operate (DBFO), (g) Finance Only, (h) Operation & Maintenance Contract (O & M), (i) Design-Build (DB) and (j) Operation License. They also plotted graph between Degree of Private Sector Involvement and Degree of Private Sector Risk. BOT provides consortia with a concession to finance, build operate and maintain a facility. During the life of the concession, investors collect user fees to cover the costs of construction and debt servicing and operations, and to realise a return on investment. At the end of concession

the facility is returned to the government agency which awarded the contract. BOT model is by far the most extensively used technique in roads and highway sectors. BOO is similar to BOT model but without a clause for transfer of ownership. BOO is commonly used in developing telecom, power and social infrastructure e.g. wastewater treatment facilities. Design-build-finance-operate is very similar to BOO but with the main difference that the former is more applicable for high tech engineering projects such as a petroleum refinery where considerable design engineering is involved. BOOT is very similar to BOT, but with the difference that in the former the project is transferred to the government agency which controls the project after a negotiated period. This model is commonly used for financing road projects, port infrastructure, power utilities, etc.

5.2 Government’s Plans in Rural Infrastructure Development

The second most important finding of my study highlights the government’s initiative with regard to infrastructure development of rural areas in order to improve the standard of living of rural people. The programmes were initiated for the development of roads, water supply and sanitation, power, housing, irrigation, information and communication technology. The programmes have been briefly discussed under the following heads.

- **Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) (2006):** This scheme enhanced livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year and strengthening natural resource management.
- **Bharat Nirman (2005):** Bharat Nirman helps in building rural infrastructure, mainly roads, water supply, power, housing, irrigation, telecommunication and information technology.
- **Indira Awaas Yojana (1985-86):** This scheme provides financial assistance for construction/upgradation of dwelling units to BPL rural household belonging to SCs, STs and free bonded labourers which was later extended to other groups.
- **Rajiv Gandhi Grameen Vidyukranthi Yojana (2005)** This provides access to electricity to all rural households in five years.
- **National Rural Health Mission (2005)** This mission serves health services to the poorest households in the remotest rural regions. The main aim of this mission provides accessible, affordable and good quality of health services to the rural household peoples.
- **Provision of Urban Amenities in Rural Areas (PURA) (2004)** The mission of this scheme was the holistic and accelerated development of compact areas around a potential growth centre in a Gram Panchayat (or a group of Gram Panchayats) through Public Private Partnership

(PPP) framework for providing livelihood opportunities and urban amenities to improve the quality of life in rural areas primary objective of this scheme is to provide good quality infrastructure and associate services in rural areas.

- **Central Rural Sanitation Programme (1986)**

This scheme aims at improving the quality of life of rural people and to provide privacy and dignity to women in rural areas. It led to the formulation of 'Total Sanitation Campaign' approach in 1999.

- **Rural Infrastructure Development Fund (RIDF) (1995-96)**

This was set up by NABARD, created out of the shortfall of commercial banks in lending to agricultural/priority sectors, with the primary aim of providing low cost funds to governments to undertake infrastructure development projects in rural areas. Since the setting up of this fund, NABARD has allowed the initiation of the PPP model to access these funds for infrastructure development projects in irrigation, housing, water supply, rural electrification and construction of roads and bridges.

- **Pradhan Mantri Gram Sadak Yojana**

This plan provides connectivity to all unconnected habitations in rural areas having a population of more than 500 persons in rural areas (250 persons in the hills and desert areas) by good quality all-weather roads.

6. Opportunities in Rural Infrastructure Development

The major areas that have huge potential for the growth in Rural Infrastructure through PPP can be discussed under the following heads.

- **Rural Roads**

The demand for rural roads is increasing day by day. In the rural areas, we still have low population of village and there is no connectivity. The demands for the good quality of road are huge and increasing. As per the Tenth Plan document, there are around 100,000 unconnected habitations with population of more than 500 persons. The average distance from a village to an all-weather road is 2 km, and on an average 52 per cent people living away from the main village do not have access to all-weather roads (Bery et al. 2004). During the last few years, the demand of vehicles in rural area has gone on top position, the requirement of high quality of road network is important in rural area. That would enhance the physical, economical and social development of rural areas. This sector has most of the projects in India under various stages of implementation. Most of the road projects have been confined to development, maintenance and operation of national and state highways, expressways, bridges and bypasses under the BOT- Toll, Annuity, BOOT, and DBFOT type model. Private sectors are not interested to investment in rural, backward and remote areas due to poor ROI (Return On Investment). Only those rural areas are benefitted, where

national, state highway and district/ local level road pass. This reflects that there are vast opportunities for PPP to operate and maintain the rural roads.

- **Rural Electrification**

The availability of electricity in rural areas is still a distant dream for the villagers across the country and it poses another big challenge for government. The farmers do not get assured supply during peak cultivation periods. Government has done various efforts for generation & distribution of power in rural areas. The rural areas often suffer from shortages of power. Installed capacity has greatly increased since independence, but the gap between supply and demand remains wide due to inadequacies in generation, transmission and distribution as well as inefficient use of electricity. The access of individual households to electricity is questionable even if these targets are met. The Rajiv Gandhi Gram Vidyutikaran Yojana (RGGVY) has done effective work for electrification in rural and BPL areas. Many states have taken PPP projects to reduce the power deficit like GVK Jegurupadu Combined Cycle Power Project (BOO), Jegurupadu, Andhra Pradesh is under operation, 1000-1320 MW Coal based power plant (BOO), Karnataka and 2 MW Hydel Power (BOT), Assam is under bidding. The 60 MW thermal Power Project (BOT), Assam, Mahatma Gandhi, Thermal Power Project (BOT) at Jhajjar, Haryana and Ringyang Hydro Power Plant, Kissim Khola HEP Power plant, Hee Khola HEP Power plant, Kalez Khola HEP power plants all under BOOT in Sikkim is under construction (Amirullah 2014). This infrastructure would serve the requirements of agriculture and other activities in rural areas including irrigation pumpsets, small and medium industries, local industries, warehousing, healthcare, education and information technology in order to facilitate overall rural development, generate employment opportunities and alleviate rural poverty.

- **Storage & Cold Chain**

During the last few years the production of crop has gone on high level. However due to improper facility for storage, many wheat, rice, potato and other food grain are getting wasted. The farmers are not getting sufficient profit. Keeping in mind the huge shortage of storage facilities, the need of storage and cold chain has increased manifold which can be met through PPP.

- **Drinking Water**

The provision of clean drinking water in rural areas is another most basic infrastructures requirement. Naandi Foundation, a non-profit organisation promoted by Dr Reddy's Laboratories in association with Satyam Computer has targeted 20,000 villages by 2011, offering safe drinking water to the villagers. And a unique collaboration between ACCESS Development Services, a microfinance technical service non-profit organisation, and Hindustan Unilever Limited, one of

the country's largest producers of fast moving consumer goods has plans to provide safe drinking water to rural areas. Apart from that Self Help Group (SHG) and a private player have together financed a safe drinking water venture (based on community purification units). Here the power of Private Public Partnership can be seen in a project because the executives of the private player will manage the enterprise operations for some years, after which the management will also be handed over to the SHG. Above discussion shows the strategic role of players in public private partnership regarding provision of drinking water in rural area.

- **Education**

There is huge opportunity in education sectors also. The infrastructure expansion and improvement in quality education in rural area is not satisfactory. This can only be solved by attracting private capital through PPP route. Central and all state government are encouraging private sectors to take the task for building infrastructure in promoting quality education. PPP can deliver high-quality education at a low cost, increased the enrollment ratio, provide quality education, upgrading and setting of new elementary and secondary schools, ITIs, polytechnics, libraries, synergy between private players will improve the standard of education in rural areas. The Eleventh FYP termed as "India's educational plan" launched a scheme in November, 2008 for setting up 6000 model schools as benchmarks of excellence at block level with one school per block for providing quality education to talented rural children. Of these, 2500 schools are to be set up under PPP mode in blocks that are not educationally backward and will start from Twelfth FYP. The revised centrally sponsored vocationalisation of Secondary Education scheme aims to address the weaknesses of the earlier scheme to strengthen vocational education in Classes XI-XII and assistance is provided to 500 vocational schools under the PPP mode. Government has approved setting up of twenty new IITs on a PPP basis.

- **Rural Healthcare**

The Government of India has decided to increase healthcare expenditure to 2.5 percent of the GDP by the end of the 12th FYP. However, the government alone cannot meet the infrastructure, capacity and delivery shortages existing in the current healthcare system. There has to be increased participation of private sector through PPP route. The NRHM was launched in 2005 to provide accessible, affordable and accountable quality health services to the poorest households in the remotest rural regions. Its strategy includes promotion of PPP for gaining managerial efficiency and ensuring achievement of public health goals. The government has allowed the private sector for investing in manufacturing of medical equipment, setting up training centre's for medical professionals (nurses, paramedics etc.) in rural areas; Some of the successful PPP involves laboratory services

(pathology, radiology, CT scan, MRI etc.), mobile medical units, PHC management and telemedicine services (Amirullah 2014). The private sector is the most important source of healthcare services in India, providing close to 80 per cent of all services, according to the government's own reckoning. At independence the private sector in India had only eight percent of health care facilities (World Bank 2004) but recent estimates indicate that 93% of all hospitals, 64% of beds, 85% of doctors, 80% of outpatients and 57% of inpatients are in the private sector (World Bank 2001).

7. Challenges before PPP in India

Though, there are various opportunities of PPP in rural infrastructure development in India but at the same time it has huge challenges and hurdles in its way. These challenges disturbed the speed of success of PPP projects in India. Still government has not framed policy for PPP. Many states have framed their own policies and guidelines that give a lot of confusion for private sectors. Some of the challenges that were investigated during my study can be discussed under the following heads.

- Lack of clear PPP policies and guidelines in the states.
- Private sectors do not want to invest in rural area due to low ROI and low literacy level.
- Absence of extra incentives by government for private player in rural area.
- Unwillingness on part of rural peoples to pay toll charges & sometime even they protest against this.
- Lack of Proper coordination between central, state and local level government.
- Unclear roles of public and private sectors in PPP projects with regard to rural areas.
- The biggest challenge is the slow process of PPP projects approval.
- Governments are not willing to recognize the importance of projects development activities such as, detailed feasibility study, environmental/forest clearances etc of PPP projects in rural areas.

8. Findings & Suggestion

On the basis of above discussion and analysis of various sectors, here we can say that PPP projects are value addition through exchange skills, knowledge, and expertise between public and private sector organizations. There are huge opportunities for private sector to investment in rural areas sector in PPP mode. Rural area has backward and remote area, where need of basic infrastructure development and fundamental facility on the top priority. Some sectors like power, healthcare and drinking water have good example of private sector investment. It has been seen that central or state government are now focusing more towards education sector with PPP model. The low income, low literacy level and unstructured working environment has issues, those create doubt in the mind of private sector. More of the

private sectors do not want to go in rural area because they misconception about un-proper return on investment. Government wants to basic infrastructure development and fundamental facility in remote area. But there is no arrangement of policy to provide additional benefit to the private sector for investment in rural area. For the development of rural infrastructure, there should be need of assurance of private sector by government side for proper return on investment. Government should initiate and arrange some additional benefit policy for investment of private sector in rural areas to attract private sector to come with PPP mode in rural area. The government must assure security to private sector in terms of proper return on investment. There is also need of fast track PPP projects approval system, environment, forest clearance, land acquisition and arrangement of finance facility in PPP projects.

9. Conclusion

The expansion of PPP projects in India in various sectors like road, port, urban development, health, education and other sectors is good sign for the country. However the, number of PPP projects in rural infrastructure or services is very less in number. Government has to accord top priority to rural infrastructure development and must start schemes for rural development at the earliest possible. Government must apply win- win approach that encourage private sector to investment in rural development along with the public sectors. Both the public and private sectors have to come together and work together in rural areas for the development of rural economy and social upliftment.

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