# Infrastructure Challenges in South Asia – The Role for the Public Private Partnerships

**By:**

**ZEESHAN Muhammad**

**THESIS**

KDI School of Public Policy and Management
in partial fulfillment of requirements
for the degree of

MASTER OF PUBLIC POLICY

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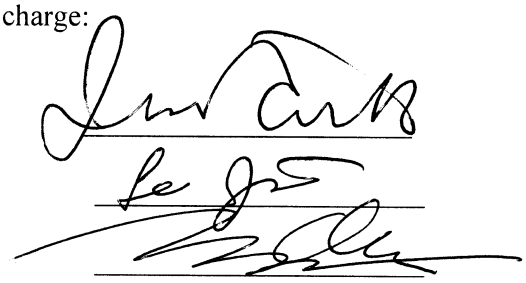

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## Abstract

Under PPPs, the public and private sectors work together on the execution of projects, each retaining their own identities and obligations. They pool resources on the basis of a clearly defined respective tasks and risks to achieve increased efficiency and added value. Project-related risks are largely transferred to the private entity. In a PPP, the focus of the government shifts to policy, strategy, and a monitoring role rather than service delivery. In the long term, the benefits of PPPs are an improved management and use of funds. Accordingly, the mutual consensus has to be the cornerstone of the planning process. Therefore, collaboration between the public and the private sector in infrastructure development is not only constructive, but indispensable. The South Asia contains around one quarter of the world's population and around 40% of world's poor. Therefore, this paper will examine the present condition of infrastructure, problems in system, and plan a solution of infrastructure challenges with reference to India, Pakistan and Bangladesh and will attempt to formulate recommendations for Pakistan.

## Dedication

Dedicated to my late mother whose prayers have always and will always help me to face various life challenges with grace and fortitude.

**Acknowledgement**

Foremost I would like to extend my deep gratitude to KDI School of Public Policy & Management whose scholarly atmosphere encouraged me to carry on my research work. However this would not have been possible if Professor Park Jin has not continuously given me his valuable suggestions to improve the quality of my thesis. My heartfelt thanks are also to Professor Jinsoo Lee, member of POS committee who also spared his time to deeply evaluate my work. I will not forget the guidelines given by Mr. Arsalan Vardag Chartered Accountant who took immense pains to continuously improve the contents of my thesis. Last but not the least me also grateful to the library staff of KDI School who were always forthcoming to help me find any book or other reference material that I needed for my thesis. I am also indebted to Government of Pakistan, Ministry of Privatisation, who trusted me and sent me to prestigious institution like KDI School to improve my academic qualification.

ZEESHAN Muhammad

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## Chapter: 1. Introduction

### Literature Review.

According to the World Bank report 85% of world population residing in the developing countries and transition economies, out of this 67% population under the age of 35. All these countries required actions for infrastructure development to strengthen long-term growth. Currently service provision is inadequate as compare to demand. Near about 1.6 billion people have no power, 1.2 billion people have no access to clean and safe water, and 2.4 billion are affected by insufficient sanitation and the diseases it spreads. Moreover, in the developing countries investment budget for infrastructure is decreasing, donor support is declining as compare to past levels, and private investment in infrastructure also not sufficient. The key role of a proper and efficient social and economic infrastructure in a country's development has been pointed out by numerous worldwide observers and in these days is a hard topic for politicians, consultants, economists as well as non-governmental organizations. Therefore, infrastructure is a vital and basic requirement for economic development and for more optimal use of a country's resources. It has a directly influence on investment, the creation of new jobs, reduction of poverty and, improvement of standard of living which increase the tax revenue of the government. EIC (European International Contractors) are convinced that infrastructure has "contributed in the past decades, are able today and will continue to make a significant contribution to the United Nation's objective of reducing poverty around the world by half by the year 2015" (EIC 2010). According to the BBC report by the Richard Threlfall; he said that, "In fact there is probably no bigger question for public policy worldwide. Not only do the new big economies like China and India need more and better infrastructure, we are at a point where a lot of the ageing infrastructure in Europe and the US needs replacing. We need better roads and railways, nuclear power plants and wind farms to meet our sustainable energy needs, schools and hospitals. Failure

to invest means failure to grow and develop our social and economic fabric - we all have a stake in this. The infrastructure challenge won't be solved overnight, but the National Infrastructure Plan is an important step in the right direction" (ThrelfallRichard 2010).

Though, the required amount for investment in the infrastructure is huge and cannot be afforded by public budgets single-handedly therefore, huge part of this investment must be provided by private investors. But, it is very much clear that the private investor want good return on investment and safety about any risk. As a result, the big challenge for the developing countries and the emerging economies is to provide foreign investors with conducive business environment with proper risk safety. If the developing countries want to be a focus for private investors they must offer appealing and attractive terms & conditions. Other then funds, government needs effective polices regarding the private investment, creditability for satisfaction of private investor and monitoring & evaluation.

There is a wide spectrum of justification, why states are looking for such partnerships. But there are two main objectives first one is to achieve Value for Money (VfM) and to provide improve quality of services for the little amount spent by the government. A second but not less vital, provision of improved and better infrastructure within the set budgetary constraints through using the private finance sources via off balance sheet structures. Previous researches have suggested that, the Public Private Partnership is the best tool for overcome the challenges of infrastructure demands and improvements (Plumb IonZamfir 2008) (NatarajGeethanjali 2007) (SadkayEfraim 2007) (Myriam DunnCaveltyManuel 2009) (Martin de JongMu 2010).

**Public Private Partnership (PPP).**

PPP's is not a NEW Concept and has been in use since 215 BC. Rome needed private finance to supply grain & clothes to troops in Spain during war with Carthage. Roman Empire had no funds to solve this problem so they adopted the policy of "first payment – first refund" subject to

availability of the funds in the Treasury. There were three bidders; all demanded for guarantees against enemy attacks & bad weather. The state provided the guarantees. The private parties provided satisfactory services but some of them misused guarantees. Another instance of PPPs is Bridge of Bordeaux (France), constructed in 1817. In this case private party financed the cleaning & lighting of the Bridge and the Government would carry out construction and maintenance. Government executed the Concession Period for 99 Years authorizing the private sector to collect the entire revenue from toll, while taking responsibility to share loss if expenditure outweighs the revenue. However, "the precise estimation of toll revenue, whose real value can be known only long after the works are finished, presents one of the greatest difficulties in the negotiation of temporary or perpetual concessions" (Louis Becquey, Director General of the Bureau of Bridges, Roads & Mines, 1820). we can find similar types of cases from the history like Canal in Pennsylvania (1819- in USA) and Private Finance Initiative in 1990s (UK). PPP's is not merely Joint Venture with equity & profit sharing. It is a collaboration/relationship between private and public sector in term of provision of services in return for profit. PPP include every transaction in which the Government involves private sector i.e. contracts, supplies, construction, management contracts, concession, leases, and privatization.

PPPs are becoming more and more popular and widespread in all over the world. If we observe, past twenty years we see development in the modality/magnitude of private sector involvement. The most important feature of PPPs is the scale of private control over and involvement in financing. Nonetheless, the essential point to be noted is that, there is no distinctive or unique model of PPP. Every project has different circumstances, on bases of these circumstances we define, what is suitable and what is required. In addition, each model has a different influence and effect. Most famous and common models of PPP are as under.

- Design-Build (DB)

- Design-Build-Maintain (DBM)
- Design-Build-Operate (DBO)
- Design-Build-Operate-Maintain (DBOM)
- Build-Own-Operate-Transfer (BOOT)
- Build-Own-Operate (BOO)
- Design-Build-Finance-Operate/Maintain (DBFO, DBFM, or DBFO/M)

PPPs can also be used for improving the services and facilities in the public sector through the under mentioned models.

- Service contract
- Management contract
- Lease
- Concession
- Divestiture (either complete or partial)

Design and Build (DB) is a venture where the private partner provides both design and construction (build) of a project to the government. This type of partnership can reduce time, save money, provide stronger guarantees and allocate additional project risks to the private sector. Design Build and Maintenance (DBM) is similar to a DB except that maintenance of the facility for some period of time becomes the responsibility of the private sector partner.

Build-Own-Operate-Transfer (BOOT) is a form of project financing, wherein a private entity receives a concession from the private or public sector to finance, design, construct, and operate a facility stated in the concession contract. This enables the project proponent to recover its investment, operating and maintenance expenses in the project.

Design-Build-Operate-Maintain (DBOM) Construction contract is where a single contractor has

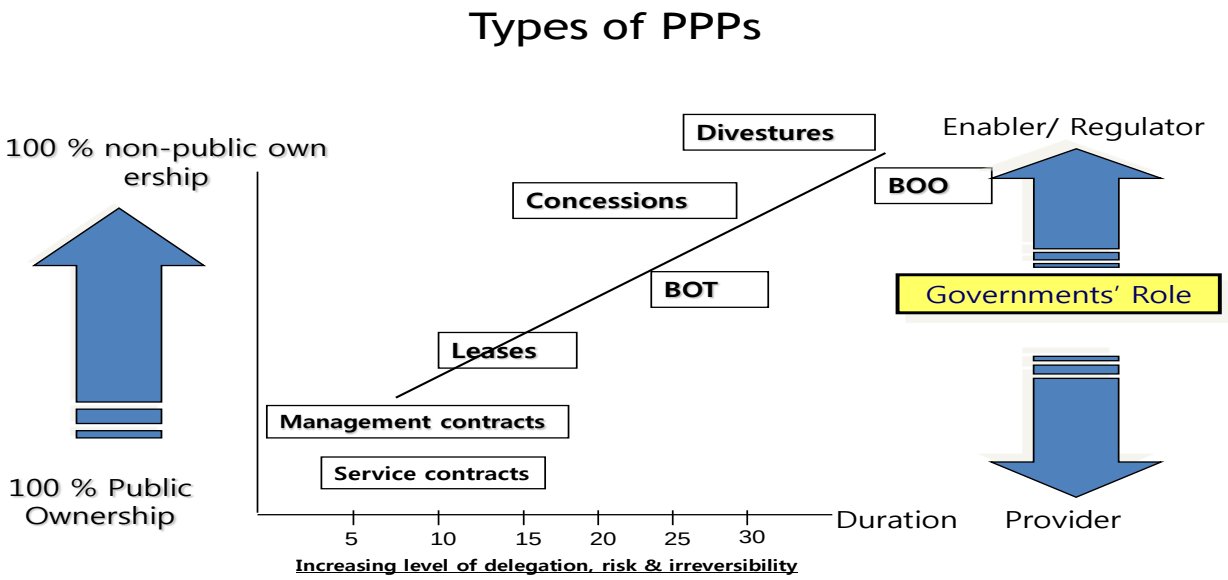
the responsibility for designing and constructing a facility, as well as of operating and maintaining it for a specified period prior to handing it over to the client.

Build-Own-Operate (BOO) is a venture when the contractor constructs and operates a facility without transferring ownership to the public sector. Legal title to the facility remains in the private sector, and there is no obligation for the public sector to purchase the facility or to take title.

Design-Build-Finance-Operate/Maintain (DBFO, DBFM, or DBFO/M) is where the private sector designs, finances and constructs a new facility under a long-term lease, and operates or maintains the facility during the term of the lease. The private partner transfers the new facility to the public sector at the end of the lease term.

A Concession is a business operated under a contract or license associated with a degree of exclusivity in business within a certain geographical area. For example, sports arenas or public parks may have concession stands.

In this research we are going to discuss the role of PPP to overcome the challenges of infrastructures in the South Asia region. We also qualitatively evaluate the some PPP projects and on basis of this, set the guidelines of PPP models for infrastructure improvement & development. We can understand the PPP models ownership and control through this picture.




**Research method**

In South Asia there are numbers of hurdles and problem for the development and improvement of the infrastructure, like huge population, lack of R&D, shortage of fund (Budget Constraints), less developed technology and lack of expertise. All these impediments can be removed if the state have fund but the main problem of the state is, unavailability of funds. The Government of these countries has shortage of budget for the infrastructure improvement and development. In this situation, state takes various steps for generating the funds, like foreign lone, financial aid from developed countries and utilization of the internal financial resources, but these are very inadequate and create other problems for economy. Therefore, the economists, financial experts and consultant suggest that Public Private Partnership is good way for reducing the budget constraints and shortage of funds.

In this research, we will examine as to how government can overcome the challenges of shortage of fund, budget constraints, effective policy making, proper role of state for infrastructure improvement and development through the PPP models with reference to India, Pakistan &

Bangladesh. Firstly an analysis regarding the current position of infrastructure in the South Asian countries will be made followed by discussion regarding the private investments and projects and steps taken for development of infrastructure through the PPP's projects. Finally, we will present the conclusion, which will include the policy recommendations and guidelines for Pakistan, keeping in the mind lessons from global experience and those from South Asian countries (i.e. India & Bangladesh).

## Chapter: 2. Analysis.

### Growth of the world economy and the need for infrastructure.

In the first decade of the new millennium, the world economy is estimated to grow at a rate of 2.7% per annum. Resultantly, there will be increase in demand for infrastructure services for consumption as well as production purposes. Not meeting this amplified demand will cause bottlenecks to growth and obstruct poverty alleviation efforts. The worth of infrastructure for the whole economic development and augmentation of trade and business activity can hardly be overemphasized. Infrastructure reflects reliability, credibility, confidence, market competitiveness, and low-cost production. Here under is a synopsis of comparative indicators of infrastructure across developing territory worldwide and a synopsis of infrastructure access indicators, respectively.

| Region | AFR | EAP | ECA | LCR | MNA | SAR |
|---|---|---|---|---|---|---|
| Population (in Millions) | 839 | 1993 | 404 | 572 | 303 | **1,567** |
| Percentage of Urban Population | 36.9 | 45 | 64 | 79 | 57.5 | **29.8** |
| Electricity (% of population access to network) | 27 | 63 | 99 | 79 | 87 | **29** |
| Water (% of population access to improved sources) | 65 | 75 | 91 | 90 | 88 | **76** |
| Internet user (out of 100 people). | 6.5 | 19.4 | 26.4 | 29 | 18.9 | **4.7** |
| Telephone user (out of 100 people). | 19 | 28 | 97 | 62 | 43 | **10** |
| Sanitation (% of population access to improved sanitation) | 37 | 60 | 83 | 60 | 81 | **53** |

(World Bank Indicator 2009)
Note: AFR: Sub-Saharan Africa; EAP: East Asia and Pacific; ECA: Eastern Europe and Central Asia; LCR: Latin America and Caribbean; Middle East and North Africa; SAR: South Asia.

We can observe from the above table about the current basic infrastructure condition of the South Asia. There is a big disparity and grossly inadequacy in comparison with world standards which is further being elaborated in next chapter.

**Growth and infrastructure in South Asia.**

In last few years South Asia has turned into one of the fastest developing regions in the world with growth rate of around 7%. The solid economic performance of South Asia has put South Asia on path to achieve the Millennium Development Goal of halving poverty by 2015. Long-term growth in South Asia is predicted to keep on around 5.5% through 2015. The zone, which includes for around one fourth of the world's population and around 40% of world's poor, needs to carry on with this growth momentum in a sustainable mode in order to inflate the overall standard of living and trim down poverty.

The worth of physical infrastructure for economic growth and poverty decline is well understood. In addition, investment in physical and social infrastructure certainly affects the poors directly and indirectly in manifold ways. Repeated investment climate surveys show that the limited and poor quality of infrastructure facilities act as a major impediment to business growth in South Asia. Against this backdrop, South Asian countries are making concerted efforts to get better infrastructure capacities in their countries. Nonetheless, the infrastructure construction industry in South Asian economies is characterized by a vicious cycle of inadequacy and inefficiency—facilities stay almost entirely in the public sector and are plagued with problems allied to inefficiency and weak governance. This, in turn, yields poor cost recovery and conflicting incentives to provide expandable, efficient, and reliable services. There is a broad discrepancy and difference in the level of infrastructure facilities and services within South Asia. There is a clear difference in overall level of infrastructure access among countries. Under mentioned is a synopsis of comparative indicators of infrastructure across some countries of South Asia.

Infrastructure level in South Asia.

| | Electricity | Water | Sanitation | Telephone | Railway line Km | Road Density (by area) |
|---|---|---|---|---|---|---|
| **Bangladesh** | **20** | **74** | **39** | **7** | **2835** | **1,594** |
| **India** | **43** | **86** | **33** | **13** | **63327** | **1,115** |
| **Nepal** | **15** | **90** | **35** | **3** | **---** | **107** |
| **Pakistan** | **55** | **91** | **59** | **12** | **7791** | **334** |
| **Sri Lanka** | **62** | **79** | **91** | **22** | **1463** | **-** |

(World Bank Indicator 2009)

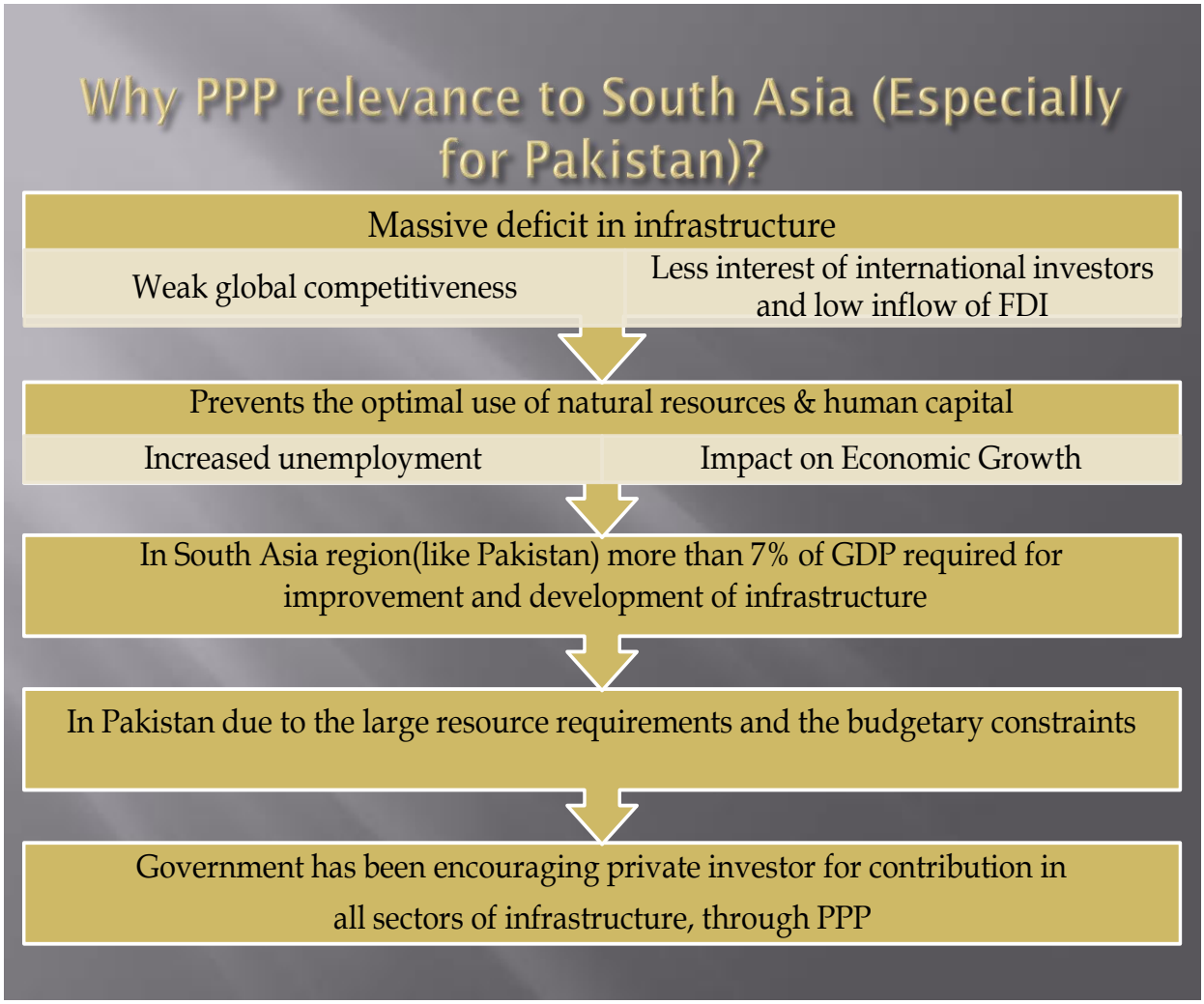
Note: Electricity (% of population access to network), Water (% of population access to improved sources), Sanitation (% of population access to improved sanitation), Teledensity (fixed line per 100 people), Roads (% of rural population living within 2 km of an all-season road).

As we discussed and see above synopsis there is big lack of infrastructure facilities in the South Asia, which is the main impediment in the development. Now question arises, how South Asian countries improve the infrastructure in presence of lack of fund, poor use of economic resources, shortage of expertise, huge population burden, and big issue of security. In these circumstances, private investment in shape of fund, expertise and resources are inevitable to overcome the hurdles. On the other side, the private investor requires the guarantee against the investment, so, the state guarantee is the best and reliable for investor. In the light of this, first we will discuss the steps taken by the South Asian countries for development of infrastructure through using the PPPs models, and then case studies of India and Bangladesh.

**Why PPP relevance to South Asia (especially for Pakistan)?**

Growth rate of South Asia region is between 7 to 8% but on the other hand there is massive deficit in infrastructure services as already discussed earlier. Consequences of inadequate infrastructures come in shape of weak global competitiveness resulting in less interest of international investors and low inflow of FDI. Lack of infrastructure prevents the optimal use of natural resources, human capital, manufacturing industries and agricultural sector, due to which

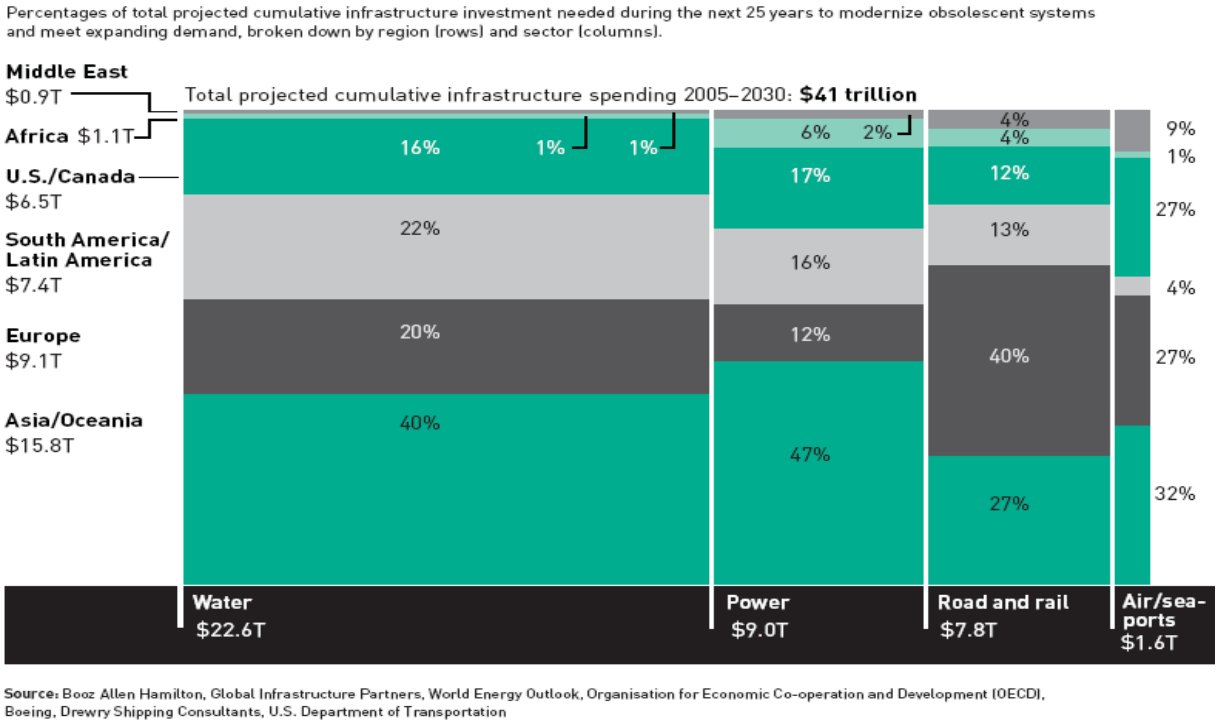
increased unemployment. However, required amount of investment for improvement of the infrastructure usually far outweigh the government resources. To solve this problem government has to explore the private sector for investment in the infrastructure improvement. In South Asia region more than 7% of GDP required for improvement and development of infrastructure. In Pakistan due to the large resource requirements and the budgetary constraints, Government has been encouraging private investor for contribution in all sectors of infrastructure. Further we can observe under mentioned chart for understanding of why PPP's is relevant with Pakistan and South Asian countries.



**Private investment & projects for infrastructures in South Asia.**

According to the forecast of the Organization for Economic Co-operation and Development (OECD) Asia requires huge investment for the infrastructure development, as compared to the remaining world, ( 40% in water, 47% in power, 27% road & rail and 32% air/sea port) from 2005 to 2030. Under mentioned graph shows the details.

Required Investment in Infrastructure between 2005 - 2030




In South Asia before 1990's the infrastructure was almost controlled by the government, either in form of policy making or delivery of services. Governments were failed to maintain and build new infrastructure because of shortage of funds, lack of R& D and poor management. After 1990, all South Asian countries started initiatives for involvement of private sector to overcome the problems. These initiatives have positive impacts on the economic development of the region, but these initiatives are very low as per demand of the region and not meet the required level due to the lack of proper management and lack of funds. So far, the South Asian region did not solve

the problems of infrastructure, which need a proper policy and long term planning for infrastructure development. There is no plate form or agency that determines and forecast the present & future need of infrastructure in the region. There is only one institution and source of information about South Asia's infrastructure investment needs (Fay & Yepes)- whose estimates for 2003 "suggest that a 7.5% GDP growth would result in increased demand for infrastructure services that in turn would require investment amounting to about 5% of GDP. In addition, a further 2% of GDP would be required for capital replacement amounting to over 7.5% of GDP in all (see Table 1). About two thirds of these expenditure requirements are associated with the roads and energy sectors alone". (Fay&Yepes 2003).

**Table 1: Infrastructure Investment Needs to Meet 7.5% Growth (% of GDP 2006-2010)**

| | Electricity Generation Capacity | Telephone mainlines and mobiles | Paved Roads | Rail Routes | Improved Water | Improved Sanitation | Total |
|---|---|---|---|---|---|---|---|
| **New Investment** | 1.8% | 0.7% | 2.0% | 0.1% | 0.3% | 0.4% | 5.4% |
| **Capital Replacement** | 0.7% | 0.4% | 0.5% | 0.1% | 0.3% | 0.3% | 2.2% |
| **Total** | 2.5% | 1.1% | 2.5% | 0.2% | 0.6% | 0.7% | 7.6% |

(Fay&Yepes 2003)

Growth of GDP in South Asia ranks at high level in the world. In the second quarter of 2009 the growth of GDP recovered was forecast at 7.6% in the 2010. On the other side global financial crisis have negative impact on the economies but it has few effects on South Asian region as forecasted. The reasons behind it, was that this region have less exposure of sub-prime markets and has limited financial system.

If we observe the all countries individually in the South Asia, India performed very well. During the 2007/08 the growth of GDP was 5.1% but now India increased the growth 7.7% in 2009/10. This rapid growth was due to contribution of consumer & government's good fiscal & monetary policy. Growth of GDP in Pakistan was very low, because of increasing gap of balance of

payment and poor fiscal & monetary policy. Furthermore, security issues decreased the confidence of local & foreign investor. Lack of infrastructure especially shortage of electricity badly effects the economic activities. Resultantly, the growth decreased from 3.7% to 3% in 2010. In the Bangladesh growth also decreased from 5.7% to 5.5% in 2010, the reasons behind it, shortage of electricity and increased demand of households. In the table 2, the World Bank forecast the GDP growth of South Asia.

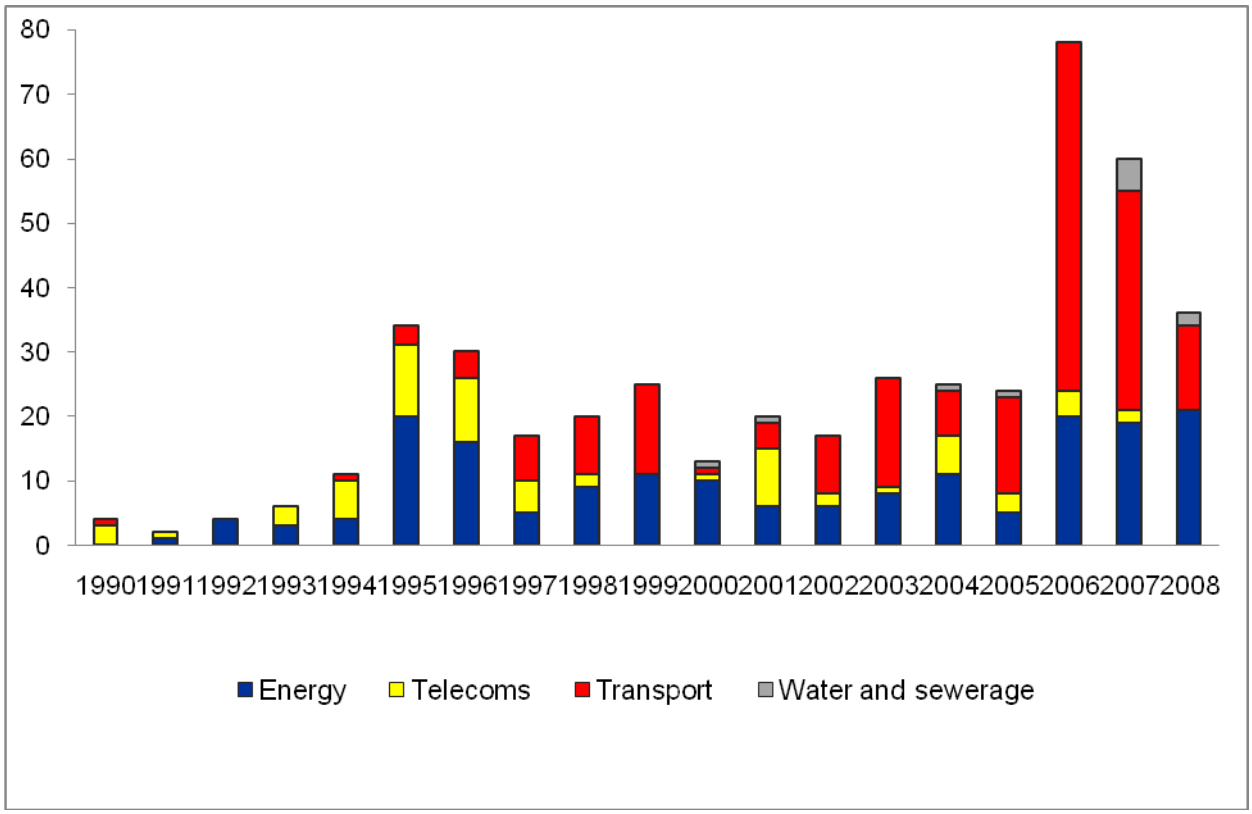
**Table 2: %Growth of GDP Forecast (South Asia) (2007 2012)**
**GDP market price at (2005$)**

| | '07 | '08 | '09 | '10 | '11 | '12 |
|---|---|---|---|---|---|---|
| **Bangladesh** | 6.4 | 6.2 | 5.7 | 5.5 | 5.8 | 6.1 |
| **India** | 9.1 | 5.1 | 7.7 | 8.2 | 8.7 | 8.2 |
| **Nepal** | 3.3 | 5.3 | 4.7 | 3.0 | 4.0 | 4.2 |
| **Pakistan** | 5.7 | 2.0 | 3.7 | 3.0 | 4.0 | 4.5 |
| **Sri Lanka** | 6.8 | 6.0 | 3.5 | 5.8 | 5.7 | 5.9 |

(WorldBank 2009)

The present condition of the infrastructure in the South Asia is very poor, the road are congested, telecommunication system is very old, not proper rail & subway system, lack of drinking water and sanitation system. These systems are the bottleneck for the economic development. The growth of this region is at the top, but the infrastructure is not as per demand and requirements. According to the (Table-1) required investment for the infrastructure must be 7.5%. In this region only India have taken some serious steps and improve the infrastructure but the Indian economy need big investment as per size of economy and population. This graph indicates the numbers of projects from 1990 to 2008.

**New infrastructure projects with private participation in South Asia, by sector, 1990–2008**




(World BankPPIF 2008)

According to the above graph in 1995 & 96 the investment was increased but after that remains in fluctuation and 2006 was the boom year but again goes down in 2007/08 as compared to 2006. Now we will discuss the current level of investment and numbers of projects. "Between 2000 and 2009, the 8 countries in South Asia implemented 361 infrastructure projects with private participation (PPI). Those projects involved investment commitments (hereafter, investment) of $89.5 billion. That investment, together with additional investment in previously existing projects, brought the total in the region to $174.4 billion. With this, South Asia accounted for 15% of the activity in developing countries by number of projects and 17% of the activity by investment. Investment in the region grew from a range of $4–7 billion in early 2000s to $15 billion in 2005 and to a range of $29–$33 billion in 2006–08. Private activity in infrastructure in the region was concentrated in India (83% of total investment) and Pakistan (12%)". (JettAlexander 2009).

Although importance wise the energy and transport sector are at the top, but in the South Asia there are big private investments in telecom, because in this region telecom sector have wide opportunity. In the 2009/10 the Telecommunication sector is top in private investment. Under mentioned table-3 shows distribution of investment according to the sectors.

Table-3 By Sector Investment

| Sector | Regional % | Regional investment | No. of Projects | No. of Country |
|---|---|---|---|---|
| Telecom | 44 | $76.3billion | 29 | 8 |
| Energy | 38 | $66.9billion | 150 | 7 |
| Transport | 18 | $30.8billion | 170 | 3 |
| Water & Sanitation | - | $400million | 12 | - |

(WorldBank 2009)

As previously we had mentioned that private investment in infrastructure started in 1990's and after that South Asian country did well but not achieved the desired output. Highlight of private investment presented by the PPIF.

| **Featured Indicator, 1990-2008** | **Value** |
|---|---|
| Infrastructure Sectors Reported | Energy,Telecom,Transport,Water and sewerage |
| Number of countries with private participation | 8 |
| Projects reaching financial closure | 456 |
| Sector with largest investment share | Telecom (48%) |
| Projects cancelled or under distress | 7 representing 2% of total investment |

(World Bank PPIF-2009)

From last few years India attracted good and huge private investment as compared to other South

Asian because India has massive trade and very good opportunity for the investor. But remaining countries, like Pakistan & Bangladesh are facing high inflation now days. Especially Pakistani economy is badly affected by the terrorism, war against terrorism and 2010 flood. Now we are going to discuss steps and initiatives taken by the Pakistani Government and after that we will discuss those taken by the Indian and Bangladeshi Governments as case study. The other countries of South Asia are not being discussed because of their relatively small economies and also because of unavailability of data.

**Steps taken by Pakistan for PPP**

Pakistan's infrastructure is grossly inadequate in comparison with world standards and has been identified as one of the critical reasons for holding back more rapid economic growth. Pakistan's investment rates, low to begin with, further declined during much of the 1990s. Overall fixed investment as a percentage of GDP fell from 17.5% in 1990-91 to about 12% in 2002, while private investment declined from about 10% of GDP to about 7.6%. Fiscal deficits have been relatively high for Pakistan throughout the 1980s and 1990s, averaging about 6.5% of GDP. As a result public debt / GDP ratio has increased from 66% in the mid 1980s to about 101% in mid 2000, impacting development expenditures. Current condition of infrastructure in Pakistan is very poor; main reason being Pakistan becoming a front line partner in war against terror after 9/11.Resultantly there are numbers of blast and suicide attacks. Furthermore, in this year there was a big flood in Pakistan, which destroyed and damaged the basic infrastructure. According to UN 30% of infrastructure was destroyed due to this big natural disaster.

The public sector has been the main provider of basic infrastructure in Pakistan. However, fiscal and capacity constraints limit the Government's capacity to meet growing infrastructure needs. This in turn has emerged as major constraint to the country's efforts to improve its investment climate. Currently, the existing infrastructure is largely inadequate to satisfy the needs of

economic development as well as the demand arising from population growth. To augment limited public resources for infrastructure, private sector participation needs to be encouraged by creating the enabling environment for increased private sector involvement. The full potential of the private sector to meet Pakistan's pressing infrastructure needs is largely untapped.

Thus far, Government initiatives have succeeded in attracting private sector participation in power and cellular telecommunications. Pakistan has restructured government role in power, to a large extent in generation but not in transmission and distribution. In other sectors, the process is incomplete or not yet begun. This redefinition of roles and the creation of independent regulatory agencies will be particularly important when there will be competition between private and publicly owned service providers and when there will be a need to insulate tariffs from political pressure

Infrastructure financing will have to rely more on private resources. Over the long-term, only an efficient and properly functioning banking sector and capital market can sustain large-scale infrastructure financing. Pakistan's capital market capacity is still limited relative to requirements and lacks the needed depth of instruments and maturity profile to meet the complex and protracted term requirements of infrastructure projects, which typically have very long gestation periods. This is due primarily to an underdeveloped market for long-term debt. While good progress in developing a corporate bond market has been made recently lot more needs to be done. Another constraint is the absence of a secondary market in debt securities. The absence of an active market in long-term debt securities accounts for the dearth of local financing in the amount and tenor required to finance infrastructure. However, considering the size of the financing needed for infrastructure, direct financing from financial institutions would not be sufficient to satisfy the demand given the balance sheet and credit exposure limitations of these institutions. The alternative thus would be to raise funds directly from the public. To do this

would require, in conjunction with ongoing reforms, raising institutional capabilities and developing financing instruments that more appropriately meet the long-term financing requirements of infrastructure projects so that resources can be mobilized on a sustained basis. Over time, the financial institutions should develop the requisite skills for formulating, developing, appraising, supervising, and providing advice to infrastructure projects in different sub sectors.

The Government recognizes the importance of improving and expanding infrastructure services for sustaining economic and social development. Improved quality and service coverage in power and water supply, sewerage treatment, transport and logistics are vital for Pakistan's economy and the livelihood of its people. Tight fiscal constraints require innovative approaches - away from the traditional role of the Government as the service provider - to ensure that the massive investment needs are financed with the assistance of the private sector. The Government estimates that less than half of the infrastructure investment needs can be covered by public funds. A combination of policy reforms, institutional support, incentives and financing modalities is required to encourage private-sector participation in financing, constructing and managing infrastructure projects.

Pakistan had earlier established a policy and regulatory framework for Public Private Partnership (PPP) in the telecom and energy sectors. Unlike in these regulated sectors, the framework for PPP infrastructure service procurement in transport and logistics, and municipal services in water supply, sanitation, solid waste management, social sector, and real estate does not exist. Experience in the regulated sectors suggests that a policy, service standards, and model contracts are useful for accelerating the closure of transactions and instilling confidence of all participants.

The PPP Program of the Government of Pakistan will be focused on, but will not be limited to, the following sectors: (IPDF, Public Private Partnership Progaram 2007)

(i) **Transport and logistics** including roads, rail, seaports, airports, fishing harbours as well as warehousing, wholesale markets, slaughter houses and cold storage.

(ii) **Mass Urban Public Transport** including buses, and intra and inter-city rail.

(iii) **Municipal Services** including water supply and sanitation; solid waste management; low cost housing, and health / education facilities.

(iv) **Energy Projects** other than those being facilitated by Private Power Infrastructure Board (PPIB) and the Alternative Energy Development Board (AEDB).

**Pakistan PPP Programme**

A Task Force (TF) of senior officials from Ministries and provinces with a mandate to drive the policy reform process in the area of Public Private Partnership in Infrastructure Finance and Development has been established. The Task Force is responsible for monitoring the policy, regulatory and legislative reforms. Infrastructure Project Development Facility (IPDF 2007) serves as a secretariat to the Task Force. Four Working Groups for developing PPP Law, Model Contracts, Risk Management Framework and Viability Gap Funding were established to assist the Task Force. The focal point for implementation of the Government's PPP program is the Infrastructure Project Development Facility (IPDF), under the auspices of the Ministry of Finance (MOF), in collaboration with public sector Institutions (line ministries, provincial Governments, local bodies, state owned enterprises etc.). IPDF will provide direct access to a professional PPP unit that will help institutions to improve proposals and prepare them for tendering, without becoming a contract signatory to those transactions.

IPDF is a catalyst to increase the number, volume and quality of public infrastructure transactions that provide value for money for the beneficiaries of the facility, while assuring that private sector providers are able to earn adequate returns for quality services. Through the transactions and facilitation of policy-making, IPDF also supports the creation of an enabling policy

environment and provide hands on knowledge transfer especially to the local Government level. IPDF is also continuing to educate the public sector implementation agencies and private sector stakeholders via seminars, workshops, interviews, and publications etc. on the benefits of PPP in infrastructure development. The progress made by IPDF in terms of development of the enabling framework to facilitate the PPP program includes

- Viability Gap Funding Guidelines & Instructions
- Risk Management Framework
- Standardized Contractual Provisions (Standard Contract)
- Project Inception Guidelines
- Project Preparation & Feasibility Guidelines
- Project Procurement Guidelines
- Economic Cost-Benefit Guidelines
- Environmental & Social Guidelines
- Tariff Guidelines.

The Government is also encouraging and facilitating development of PPP cells at the sub national levels to enhance the capacity of public institutions to develop infrastructure projects under the PPP modality. In October 2007 Pakistan signed the Seoul Declaration on Public Private Partnership (PPP) for Infrastructure Development in Asia and Pacific to reaffirm its commitment to continue to support and promote PPPs as an effective means to complement the efforts of Government in the development and provision of infrastructure facilities and services to the citizens.

In 2009 the Government of Pakistan adopted the new policy of privatization through the Public Private Partnership. According to the Ministry of Privatization, GoP (PPP Policy 2009) “Privatization based around Public Private Partnership mode, management transfer through sale

of 26% equity while ensuring transparency and all other aspects safeguarded through comprehensive documentation" (GoPPC 2009). The major objective of Privatization of 26 % equity share with management rights through a PPP model is to involve national resources, assets and entities to optimal use and in particular to set free the productive likely inherent in Pakistan's SOEs.

Infrastructure Projects in Pipeline for Private Sector Participation

- Cool Chain System under National Trade Corridor:
- Faisalabad Solid Waste Management Plant:
- Lahore Southern Bypass from Motorway to Ferozepur Road:
- Pakistan Institute of Medical Sciences (PIMS) Projects:
- Flyover /Railway Overhead Bridge at Habibabad (Wanradha Ram at Km 1168-1169 of the National Highway N-5)
- Karachi Circular Railways (KCR)
- Environment-Friendly CNG Buses
- Charsadda Solid Waste Management System
- Hydropower Projects
- Higher Education Commission (Hostel Facility at COMSATS, Islamabad and Medical College at Quaid-e-Azam University, Islamabad).
- Reconstruction / Rehabilitation Of Islamabad Water Supply
- Solar Street Lights
- Solar Thermal Power Plant
- Operating Cargo and Oil Trains with Pakistan Railway.
- Sundar Logistics Hub Development of logistics industry is considered as an important aspect of trade facilitation and increased competitiveness.

- LESCO smart prepaid meter program in Lahore.
- Power Generation System for University Of Karachi.

## Chapter: 3. Case study of India and Bangladesh.

### India.

By nominal GDP, economy of India is the eleventh largest economy. Since 1990 India began to register a fast-paced economic growth, on free market principles, international competition and foreign investment. Indian economic power includes very large space of human, natural resources, and a large team of skilled professionals. Economists forecast that India will be entered in the leading economies of the world by 2020.

In GDP, India's large service industry contributes 55% while the industrial and agricultural sector contributes 28% and 17% respectively. Predominant occupation in the India is agriculture that contributes almost 52% of employment; service and industrial sectors provide 34% and 14% respectively. India's trade has grown fast. India played very prominent role in the world trade. According to the Trade Statistics of the WTO, in 2006, India's total merchandise trade (including exports and imports) was valued at $294 billion in 2006 and India's services trade (including export and import) was $143 billion. The best prominent criterion to gauge economic development is the quality of basic infrastructure. According to the Planning Commission, approximately 8 percent of the Gross Domestic Product or GDP needs to be invested in infrastructure. To attain such demands, numerous Public Private Partnerships (PPP's) are being initiated by Government of India for implementation of infrastructure projects. Launching of PPP's projects is the best way to overcome the challenges of infrastructure. But it is not to easy to promote PPP, because there are numbers of hurdles and impediments in process.

Different steps have been taken by Government of India to promote an expended PPP framework in order to overcome the constraints. In this process public, foreign and private investment play very vital role to boost up these efforts. To secure and formalize the process, the government set

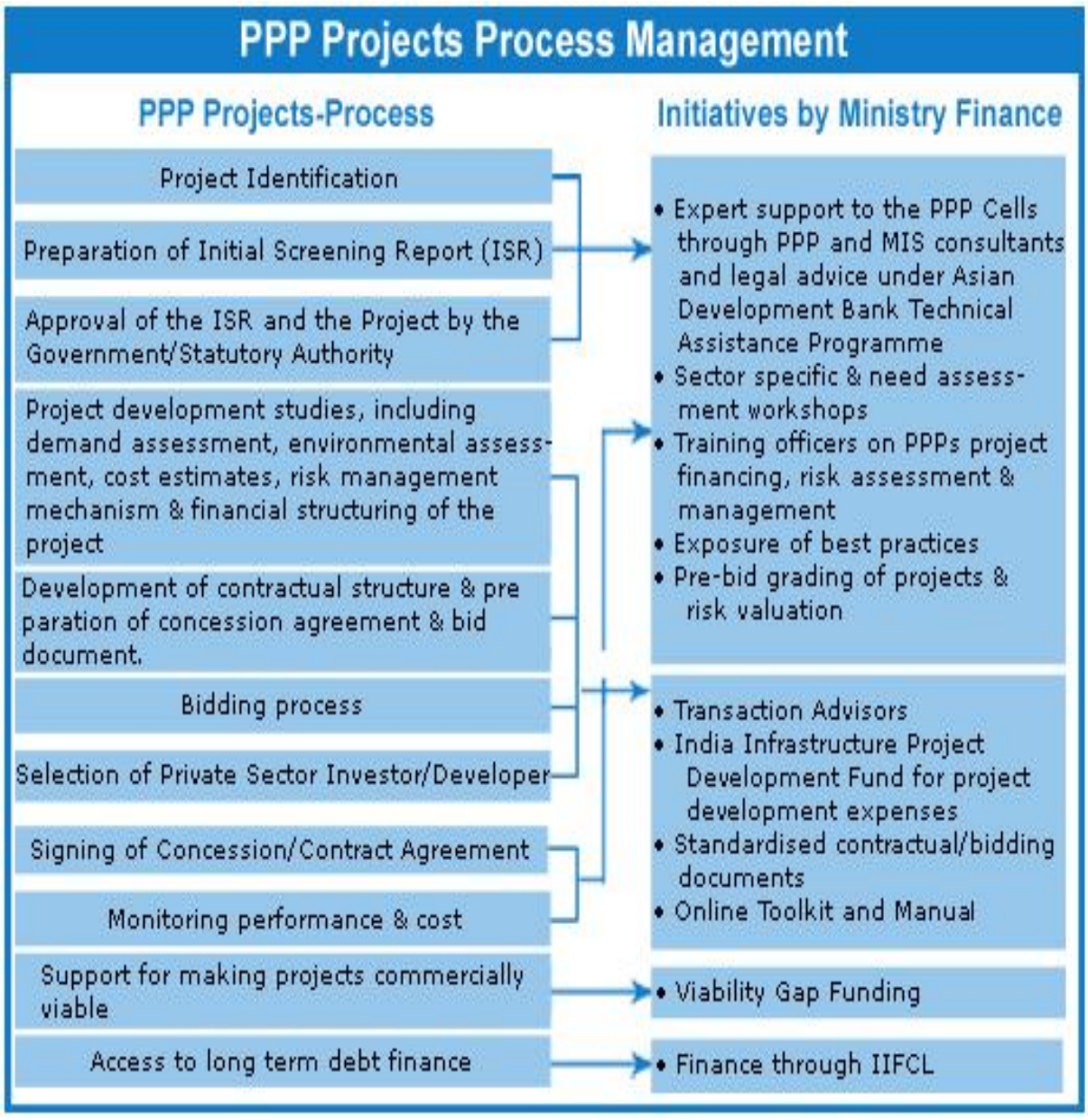
standardized contractual documents that include all terminologies related to risks, investment, length, liabilities and performance standards. Approval for PPPs is made through Public Private Partnership Appraisal Committee or PPPAC and also have website for the spread the important information and is online database for PPP projects.

In 2004, Government of India constituted the Committee on Infrastructure (CoI), committee chaired by the Prime Minister. The main objectives of this committee were to formalize and pace up the PPP's projects to attain the sustainable growth through developing the world level of infrastructure facilities and services. CoI formed a Committee of Secretaries to prepare and implement an Action Plan. GOI has issued various key documents on Rail Road Connectivity of Major Ports; principles for financial support to PPP's in Infrastructure; Guidelines on formulation, appraisal and approval of PPP"s Projects. GOI has taken numerous additional steps for facilitating PPP which included the capacity building, VGF scheme, IIFCL to provide long-term capital, and other helpful assistance. Viability Gap Funding (VGF) scheme: Some time infrastructure projects are economically justifiable but not viable commercially, especially in the starting years due to long gestation period and various economic externalities. In long term infrastructure projects the commercial viability is difficult, to establish, especially at the initial stage of the project. Due to this, there is a need of some upfront assistance. Knowledge management and capacity building: The GoI is also taking steps to assist and improve capacity building at the state and federal level. Under the Finance Secretary an Inter-Ministerial Group (IMG) has been constituted to monitor and inspect pre-qualification of bidders under PPP to eliminate fly-by-night operators.

In January 2006, GOI established IIFCL India Infrastructure Finance Company Limited (IIFCL) under the Companies Act, 1956.The goal of IIFCL is to cater for long-term infrastructure

financing that bank usually are reluctant to do. Under the IIFCL, funding is provided to roads and bridges, railways, seaports, airports, inland waterways, and other related projects; like Power; Urban transport, water supply, sewerage, solid-waste management, and other physical infrastructure in urban areas; Gas pipeline infrastructure projects.

Under mentioned chart show the process of PPP's projects in India




(pppinindia 2010)

Indian economy is the largest economy in the South Asia. India performed very well in the infrastructure development but did not meet the required demand. According to the official sources, there are total of 450 project undergoing PPP's process with details as under;

*Crore=100 million

| SECTOR WISE **FIGURES** | | | | | | |
|---|---|---|---|---|---|---|
| Sector | Total Number of Projects | Based on 100 crore* | Between 100 to 250 crore | Between 251 to 500 crore | More than 500 crore | Value of contacts |
| Airports | 5 | 0 | 0 | 303 | 18808 | 19111 |
| Education | 1 | 93.32 | 0 | 0 | 0 | 93.32 |
| Energy | 24 | 175.59 | 558 | 2669 | 13708 | 17110.59 |
| Ports | 43 | 96 | 970 | 2440 | 62992.95 | 66498.95 |
| Railways | 4 | 0 | 102.22 | 905 | 594.34 | 1601.56 |
| Roads | 271 | 3162.5 | 5526.49 | 32861.87 | 60453.92 | 102004.7 |
| Tourism | 29 | 742.56 | 674.52 | 0 | 1050 | 2467.08 |
| Urban Development | 73 | 1283.86 | 1468.7 | 2403.91 | 10132 | 15288.47 |
| **Total** | 450 | 5638.83 | 9299.93 | 41582.78 | 167739.21 | 224175.8 |

(pppinindia 2010)

**Bangladesh.**

Bangladesh is a democratic, liberal and moderate country. The Government adopts an open and free economic policy and this has been verified by the country's signing and adhering to all the international protocols, charters and conventions regarding free trade and investments. The GDP is contributed by the following sectors Agriculture 21%, Manufacturing 16%, Trade 13%, Transport 11%, and Civil Construction 8%.

Government's increased motivation since 1990s is to involve private sector through proper and strong macro-economic management and optimal use of public resource to back up technological process in agriculture, urban & rural infrastructure, health & education coupled with improved policies to ensure community participation and private sector partnerships with non government organizations (NGOs) to facilitate grassroots public services. Bangladesh has made a strong start to achieve the Millennium Development Goals (MDGs).

The Government has been taken numerous steps for partnership with the private sector, main objective is attaining additional resources, capitalize on the private sector's efficiency and ability to innovate. Government is supporting PPP's to strengthen its economy and to boost up the economy.

Government offers liberal opportunities for private sectors under its liberalized private sector-led growth strategy. Almost all sectors are open for foreign and local investor, except some like defense and strategic concern sectors. Different tax incentives are provided. Bangladesh is a signatory of following international agreements to attract the foreign and private investment.

- MIGA (Multilateral Investment Guarantee Agency),
- OPIC (Overseas Private Investment Corporation) of USA,
- ICSID (International Centre for Settlement of Investment Disputes).
- Member of the WIPO (World Intellectual Property Organization).

GoB has notified the private infrastructural guideline by Gazette notification in 2004 to support and promote private sector involvement. The part of public sector in investment is gradually decreasing and the contribution of private sector total investment is gradually increasing. Under mentioned is the table that shows the public and private investment in country as percentage to GDP

Investment as percentage of GDP.

| **Financial Year** | **Total Investment %** | **Public Investment %** | **Private Investment %** |
|---|---|---|---|
| 2000-01 | 23.09 | 7.25 | 15.84 |
| 2001-02 | 23.15 | 6.37 | 16.78 |
| 2002-03 | 23.41 | 6.20 | 17.21 |
| 2003-04 | 24.02 | 6.19 | 17.83 |

| | | | |
|---|---|---|---|
| 2004-05 | 24.53 | 6.21 | 18.23 |
| 2005-06 | 24.97 | 6.30 | 18.37 |

(FinanceMinistry 2009)

The Government is making efforts to attract private sector in infrastructure projects like expressways, highways, including mass-transit, flyovers, bus terminal, airport terminal, aviation area, ports, railway urban & rural infrastructure & services etc. The related Ministries, agencies and Chambers of Commerce & Industry extend all kinds of support and cooperation to back up foreign/private investors to take part in various constructions, infrastructure development projects. The GoB is taking steps to approve the Multi Modal Transport Policy in which there is a clear cut instruction to encourage, support and facilitate private sector to invest in the infrastructure sectors in a bigger and optimal way.

**Lesson from South Asia for Pakistan (particularly from India & Bangladesh).**

In the South Asia, India is the biggest country in respect of area, economy, trade, population, consumer market, and growth as compare to other countries India had a few significant PPPs as early as the nineteenth century i.e. Railway Company operating between Bombay and Thana (1853), Bombay Tramway Company (1874), and the best example of the PPP projects is, power generation and distribution companies in Bombay. India had set numbers of successful example in PPP project for the development of the infrastructures but that is inadequate as compare to demand, due to a huge population, area and numerous impediments. Director-General of the Confederation of Indian Industry, Mr. Tarun Das said "There is a clear need and opportunity for business to supplement government efforts. Business associations have a very large role to play. I urge leaders to engage and enlist the support of business associations in their own country and around the world to tackle this epidemic". A numbers of research papers were written on Indian PPP projects, (ADB 2006) which discussed their various pros & cons. Pakistan and Bangladesh

are small countries & economies in all areas as compared to India. Under mentioned table clearly indicate the dominant position of the India.

PPI Projects in South Asia

| Country | Primary Sector | PPI Type | Project Count |
|---|---|---|---|
| Bangladesh | Energy | Divestiture | 3 |
| Bangladesh | Energy | Greenfield project | 7 |
| Bangladesh | Telecom | Greenfield project | 12 |
| Bangladesh | Transport | Management and lease contract | 5 |
| India | Energy | Concession | 1 |
| India | Energy | Divestiture | 12 |
| India | Energy | Greenfield project | 99 |
| India | Energy | Greenfield project | 1 |
| India | Telecom | Divestiture | 2 |
| India | Telecom | Greenfield project | 32 |
| India | Transport | Concession | 123 |
| India | Transport | Greenfield project | 70 |
| India | Transport | Management and lease contract | 2 |
| India | Water and sewerage | Concession | 3 |
| India | Water and sewerage | Greenfield project | 4 |
| India | Water and sewerage | Management and lease contract | 5 |
| Nepal | Energy | Greenfield project | 4 |
| Nepal | Telecom | Greenfield project | 3 |
| Pakistan | Energy | Divestiture | 4 |
| Pakistan | Energy | Greenfield project | 34 |
| Pakistan | Telecom | Divestiture | 1 |
| Pakistan | Telecom | Greenfield project | 5 |
| Pakistan | Transport | Concession | 3 |
| Pakistan | Transport | Greenfield project | 5 |
| Sri Lanka | Energy | Greenfield project | 13 |
| Sri Lanka | Telecom | Divestiture | 1 |
| Sri Lanka | Telecom | Greenfield project | 6 |
| Sri Lanka | Transport | Concession | 1 |

(WorldBankPPIAF 2009)

Under mentioned are the general recommendations which we have learned from the South Asia especially from Indian case studies.

Rigorous preparation and planning to ensure that the PPP approach delivers value for money and

is sustainable. Sustained political and public sector support to the strategic decisions around the PPP. A conducive legal, regulatory and financial framework supporting the development and implementation of PPPs. The mutual needs and objectives should be clearly delineated.

Due to a wide spectrum of infrastructural demands, there should be clearly defined strategic priorities. Governments should have enough liquidity to ensure efficient financing. Intersectoral and intrasectoral collaboration should be effectively channelized to have synergism and innovation. Transparency should be ensured to have a broad based acceptability. Government should build the credibility, PPP friendly circumstances, and bright future opportunities for the local and foreign investor to attract the investment.

Government should make the long term and solid policy for implementation of projects timeline, accountability, affordability of services and evaluation & monitoring. Leveraging public funds with private financing from markets. For every penny, that the state spends it should be able to attract optimal funding from the private sector. Government should provide the protection to investor in every aspect, like security issues, safety of assets, and about the future uncertainty. In infrastructure development, state should do efforts for transfer of risk to private sector as much as possible. This strategy reduces the financial burden from the government side and overcome the budget constraints.

## Chapter: 4. Recommendation for Pakistan.

In Pakistan 40 billion dollars will be required in the next five years for the development of infrastructure and this amount will further increase to near about 65 billion dollars if costs of water storage dams are included. Government alone cannot bear this huge investment. Pakistan has huge potential in respect of natural resources and agriculture sector, but the government is not taking the advantage of these resources because of lack of funds and infrastructural shortfalls. During the last decade there has been no investment in oil & gas exploration nor there exits any proper Oil & Gas policy in Pakistan. Currently there is huge short fall of electricity in the Pakistan and also some South Asian countries, and that is affecting the economic growth rate. Similarly, there are huge reserves of coal in the Pakistan but there is no authority in the country to effectively tap these resources.

South Asia especially Pakistan is a new comer in the PPP program, so it can learn lessons from the global experience. After the study of various PPP projects form developed & developing countries (India, Bangladesh, Mexico, Chili, United State, United Kingdom, Hungry and Australia) under mentioned are the policy guidelines for Pakistan.

Firstly, in Pakistan there is great lack of continuity of governments polices. The main reasons behind it, are dictatorships and lack of democratic system, premature dissolutions of the governments,sharp ideological political divisions so that each new government discontinues polices of ex-government. According to a research when new government came in rule, near about more than 80% polices are changed by the new government. Therefore, in this regard continuity of polices and democracy is not assured by the political system. If we talk about the politicians in the Pakistan, most of them are landlords and a reasonable area of country is under control of feudal system. resultantly, when these type of politicians become a part of government

system, they have no educational background and no vision for the country. At the end, public policy making process is very much poor.

On the technology side, new and advanced technology is very important for development of infrastructure. When government imports the heavy mechanical machinery and other products for the improvement/construction of the infrastructure, must import the technology of these products as well and should also make some innovation,indiginisation & improvement in this technology.

All countries in South Asia have very low budget allocation for development of the infrastructure. In Pakistan, 60% of GDP is spent for the servicing of foreign debt (Principle plus interest) and a reasonable part of GPD is used to meet the defense expenditures. Same is true in case of India. After excluding these two huge parts remaining budget is inadequate for health, education, transport, R&I, and development of the infrastructure. Therefore, government should reduce the budget allocation for defense and debt retirement, increase the development budget and decrease the non development expenditure. In the financial sector government must control the inflation rate; when inflation rate increased due to foreign debt and issue of new currency note, it has ultimate effect on the interest rate. If economy face high interest & inflation rate investor will not invest in the country. On the international investor side the foreign exchange rate and policy play very vital role for attracting foreign investment. So, government should set effective foreign exchange policy. .

Government should formulate and establish a body, whose task must be to determine the infrastructural demand, formulate policy & planning, streamline the implementation process and ensure minimum lapses through proper evaluation & monitoring. During the implementation process government should provide full support & assistance. There should be a dynamic and proactive co-ordination among various concerned bodies of the government. The most important

part of PPP process is the bidding, therefore, it should be transparent. Government should try to accommodate the viable investment areas identified by the experienced investors. Government should clearly define the respective sources of revenue at early stage to prevent any possible ambiguity. Government & private parties generate the fund, so adequate protection for lenders against risk should be ensured. Main target of the government in PPP projects is to transfer the risk towards the private sector. Following are the major risks.

Foreign exchange risk

Credit and regulatory risk

Project completion delay risk

Construction cost overrun risk

Environmental and social risks.

While undertaking projects of roads and sea/airports, government should rigorously analyze traffic projections. All matters should be settled at start of the projects; government should avoid the midway negotiation and change.

The most important duty of government is to increase and reinstate the confidence of the international investors through setting a good example and also through organizing the seminars, workshops and media campaigns, in which the profitable areas of investment should be marketed.

**Chapter: 5. Conclusion.**

We have briefly discussed the importance, need, present condition and future forecast of infrastructure. In this regard we have tried to benefit from global experiences in general and South Asian experiences in particular. Within South Asia, our main focus has been Indian economy due to bigger size of her economy as well as due to wide variety of projects which she has undertaken. We have tried to apply the results to particular setting of Pakistan and have arrived at following conclusion.

South Asia region contained near about 40% of the world population with fewer resources (Technology, skilled labor, fund etc.). However, it is very hard to maintain all primary and secondary infrastructures for whole population within the limited budgets. In the South Asia, there are two big countries, Pakistan & India; they spent a huge part of budget on the defense expenditure. So, they have no reasonable fund for the other important sectors. There are no proper managements for the prevention of natural disaster by the South Asian countries. In 2010, heavy rain and flood destroyed and damaged the basic infrastructure in the Pakistan, India and Bangladesh. These countries faced loss numbers of time in the history but they did not make solid disaster management. In the South Asian region there is lack of credibility, not adequate instruments as well as no ability to undertake long-term equity. Also a demand required by the infrastructure projects is not entertained by the local financial markets. Some projects require special skill & technology, like new airports, telecommunication systems and transforming system. But the government does not have ability to adjust the private partner in the risk. Most important constraint is the corruption. The South Asian countries have very much corruption especially in the public sector. Therefore, the infrastructure development projects fail and remain unfinished.

When government is going to enter in PPP projects, following recommendation should be kept in

consideration. Financial structure should be so made so as to ensure profit maximization and protection of money's value by both the public and private sector. This is especially important in case of capital intensive projects like water, transport, and sea/air ports. Since most of the projects in the infrastructure sector have long gestation period it is imperative for both parties to make unequivocal provisions in their mutual agreements especially touching upon areas like quantum of respective investments, degree of private sector participation and fixing of deadlines for profit recovery etc. Unfortunately most of Candidate Countries are still short of harboring the requisite expertise to this effect. The projects involving obvious negative externalities like the management of solid waste are of very sensitive nature and imply heavy transfer of responsibility to the private party and so should be carefully carried out. The basic premise of PPP is the limitation of the government role to the provision of enabling environment with a private sector in the forefront to carry out execution of various projects. This also implies the maximum shifting of the risk to the private sector especially because only it has the accessory expertise. Any compromise on this principle through unnecessary government interference can turn out to be counterproductive.

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