

**PUBLIC-PRIVATE PARTNERSHIP FOR THE
DEVELOPMENT OF A BACKWARD STATE:
A CASE STUDY OF BIHAR**

A THESIS

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by

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**PUBLIC-PRIVATE PARTNERSHIP FOR THE
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CERTIFIED that the work in this thesis entitled “Public-Private Partnership for the Development of a Backward State: A Case Study of Bihar” submitted by Mr. Sandeep Kumar was carried out by candidate under my supervision. Such material as has been obtained from other source has been duly acknowledged in this thesis.

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DECLARATION

I do hereby declare that this thesis entitled "Public-private Partnership for the Development of a Backward State: A Case Study of Bihar" is an authentic record of the research work carried out by me under the supervision and guidance of Dr. S. N. Tripathy, Professor, Gokhale Institute of Politics & Economics, Pune. The thesis has not been submitted earlier anywhere else for the award of any degree diploma, associateship, fellowship or other similar title of recognition.

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CHAPTER 1

INTRODUCTION

Chapter - 1, the introductory chapter- deals with importance of social sector for the development of a country and welfare of its citizens. The performance of India in social sector with respect to other countries, expenditure pattern etc have been discussed in this chapter. The position of Bihar vis-a-vis other major states of the country, theoretical arguments about the importance of public private partnership (PPP) for the provision of public services, the rationale for the present study, chapterization schemes, organization and justification of the present study have been presented in this chapter.

1.1 Economic Development

Economic development has often been used in the past as a synonym of economic growth, considering increase in output of goods and services as the measure of economic growth. The economic growth is a process whereby an economy's Gross National Product (GNP) increases over a long period of time (Meier and Baldwin, 1966). A country may record increase in its GNP if a resident of the country invested massive capital outside the country and earn big profits. But, this does not mean that the economy of a country has developed. This measure fails to take into consideration changes in the growth of population. A rise in GNP accompanied by faster growth in population will not reflect economic advancement or welfare of the country. Thus, it was argued that Gross Domestic Product (GDP) may give a more accurate picture of economic growth as compared to GNP. But, many subsequent economic theories further criticised the concept of using

GDP growth as measure of development of an economy. They argued that mere increase in GDP does not reflect the actual growth of a country. If a population of a country grows at a faster rate than the rate of increase in GDP, product per capita will decline. So, it is inappropriate to accept that the country has experienced economic growth only because its GDP has increased. Kuznets observed that economic growth of a nation may be defined as a sustained increase in its population and product per capita.

During 1970s, new economic theories proposed not to consider economic development identical with economic growth. It was argued to consider economic development as growth plus progressive changes in some crucial indicators which determine the well-being of a person. Some economists raised the question whether economic development has improved the quality of life of people. Development economists no longer concentrate on the growth performance of an economy as reflected by GNP or GDP rather shifted their focus to new indicators which measure the human well-being. Many economists have tried to measure economic development in terms of social indicators. Various indicators were added into social indicators. Some of them are inputs such as nutritional standards or number of hospital beds or doctors per head of population, while other indicators are output indicators such as improvements in health in terms of infant mortality rate, maternal mortality rate, etc. Social indicators are often referred as basic needs of development. Basic needs focus on alleviation of poverty by providing basic human needs to the poor. The direct provision of such basic needs as health, education, food, water, sanitation, etc. affects poverty in shorter period with fewer monetary resources, whereas GNP or GDP strategy aims at increasing productivity and incomes of the economy leading to poverty reduction in longer time period.

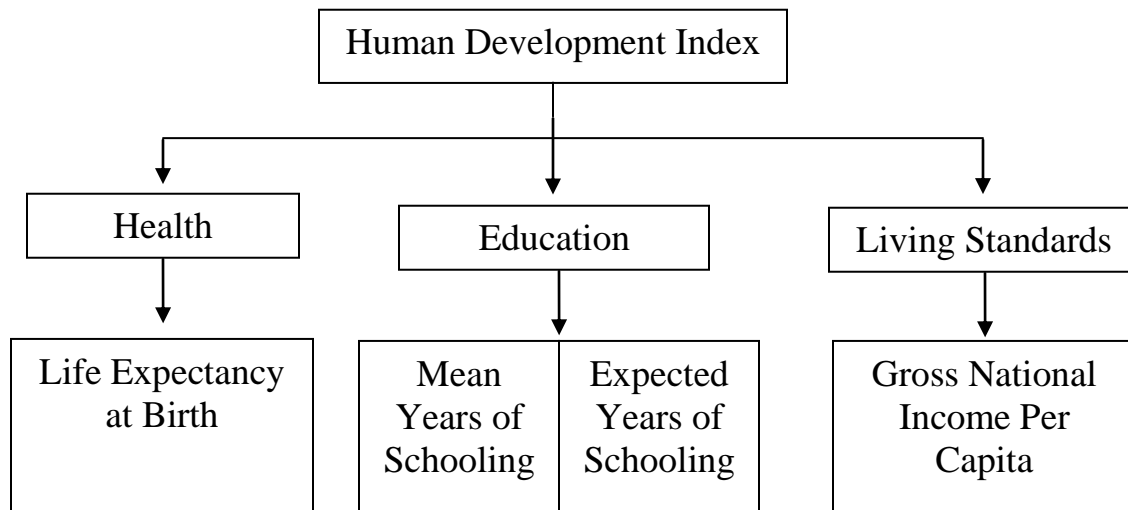
Mahbub ul Haq formulated a new concept that sought to shift focus from national income accounting to human well-being by developing some new indicators to measure the process of change. He remarked that the problem of development must be defined as a selective attack on the worst forms of poverty. Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, unemployment and inequalities (Mahbub ul Haq, 1971). This way a higher level of productivity and income can be achieved through human development in the form of educated and healthy people. The merit of these indicators is that they are concerned with ends, the ends being the human development. Hicks and Streeten (1979) considered health, education, food, water supply, sanitation and housing as six social indicators for basic needs. Amartya Sen (1984) devised the new concept of capabilities which added new dimension to this trend in economic theory. Their concept of human development was adopted by United Nations Development Programme (UNDP) which takes into account the health conditions reflected by life expectancy at birth, education and the level of knowledge reflected by literacy rate and gross enrolment ratio, and economic conditions reflected by GDP per capita.

Human development can be defined as a process of enlarging people's choices that are created by expanding human capabilities. Income is one of the choices but it is not the only choice. Rise in income is not the same thing as the increase in human capabilities. Besides, higher income, poor people put a high value on adequate nutrition, access to safe drinking water, better medical facilities, better schooling, affordable transport, adequate shelter, secure livelihood and productive and satisfying employment. Thus,

human development is a broad and comprehensive concept. It is as much concerned with economic growth as with its distribution. Economic growth is important as a society cannot ensure well being of its citizens without continuous growth. So, economic growth is essential for human development. Growth in economic output enlarges the range of human choice rather than serving as goal in itself (OECD, 2001). Human development is, therefore, equally important because only a healthy and educated person can only contribute in an effective way to economic growth. Thus, human development indicators accomplished a desirable advance over average growth indicators of production and income by taking up health and educational indicators.

Human Development Report (HDR) 1990 starts with the words “People are the real wealth of a nation”. The report stated that the objective of development should be to create an enabling environment for people to enjoy long, healthy and creative lives. The central objective of the HDR for the last two decades has been to emphasize that development is primarily and fundamentally about people. People are both the beneficiaries and the drivers of human development, as individuals and in groups. To capture the advancement in human development, Human Development Index (HDI) was devised using four indicators reflecting three dimensions with respect to human development (**Figure 1.1**).

Figure 1.1: The HDI – Three Dimensions and Four Indicators



The HDI helps answer some basic questions about the progress of societies, such as which countries have progressed faster and whether poor countries are catching up with rich ones. Measured in terms of the HDI, progress around the world has been impressive. The world average HDI rose to 0.68 in 2011 from 0.56 in 1980 (**Table 1.1**). This increase reflects aggregate expansions of about a fourth in the health and education indicators and a doubling of income per capita. Some countries have consistently performed well and maintained their growth in terms of human development. Few developed countries like Norway and Australia are at top position in terms of HDI. Developing countries have also tried to achieve higher level of human development with mixed result. Some have managed to perform consistently over the years. But, there is still a long way to go in order to catch up with developed countries. The underlying reason for this mixed result with respect to developing countries need closer examination. A developing country like India, which ranks 134 in HDI, should understand the factors which influence human development. By following the pattern

practiced in countries which has helped them in achieving high HDI, developing countries can get consistent result over the years.

Table 1.1: Trends in the Human Development Index (HDI), 1980-2011

Rank	Country	1980	1990	2000	2005	2009	2010	2011
1	Norway	0.796	0.844	0.913	0.938	0.941	0.941	0.943
2	Australia	0.850	0.873	0.906	0.918	0.926	0.927	0.929
39	Poland	-	-	0.770	0.791	0.807	0.811	0.813
61	Malaysia	0.559	0.631	0.705	0.738	0.752	0.758	0.761
66	Russian Fed.	-	-	0.691	0.725	0.747	0.751	0.755
84	Brazil	0.549	0.600	0.665	0.692	0.708	0.715	0.718
92	Turkey	0.463	0.558	0.634	0.671	0.690	0.696	0.699
97	Sri Lanka	0.539	0.583	0.633	0.662	0.680	0.686	0.691
101	China	0.404	0.490	0.588	0.633	0.674	0.682	0.687
103	Thailand	0.486	0.566	0.626	0.656	0.673	0.680	0.682
112	Philippines	0.550	0.571	0.602	0.622	0.636	0.641	0.644
113	Egypt	0.406	0.497	0.585	0.611	0.638	0.644	0.644
124	Indonesia	0.423	0.481	0.543	0.572	0.607	0.613	0.617
123	South Africa	0.564	0.615	0.616	0.599	0.610	0.615	0.619
128	Vietnam	-	0.435	0.528	0.561	0.584	0.590	0.593
134	India	0.344	0.410	0.461	0.504	0.535	0.542	0.547
145	Pakistan	0.359	0.399	0.436	0.480	0.499	0.503	0.504
143	Kenya	0.420	0.456	0.443	0.467	0.499	0.505	0.509
146	Bangladesh	0.303	0.352	0.422	0.462	0.491	0.496	0.500
	World	0.558	0.594	0.634	0.660	0.676	0.679	0.682

Source: Economic Survey, 2011-12, Ministry of Finance, Government of India.

A growth in GDP growth expresses the size of the economy but it does not tell us anything about the performance of the economy. GDP has lot to say about economic activity, but when it comes to whether this activity is good or bad for society, GDP is silent (Brian Keeley, 2010). Many

countries have adopted the human capital approach for over all development of their economy. An analysis of a country’s progress in relation to its HDI offers some interesting insights. Countries have achieved faster progress in human development either due to their high achievement in health and education or unexceptional growth performance. An interesting point which is evident from top ten movers in HDI is that there is general lack of overlap between top performers in growth and those in health and education. Only Indonesia and South Korea are in top ten for both income and non-income dimensions. Out of remaining eight countries, five enter the list through higher levels of health and education. China is the only country which is in top ten solely because of its growth performance. The HDI recognizes balanced development, so that two countries namely, Lao PDR and Morocco, with moderately high progress on both income and non-income dimensions make it into the top movers (**Table 1.2**). Thus, it is evident that for a country to achieve high level of growth, it should invest in health and education. These sectors should receive high priority. A major portion of GDP must be spent on health and education to achieve high growth and thus development. This will help the countries to achieve high economic growth and the general welfare of its citizen. Health and education are part of social sector which is proved to be crucial for achieving economic development.

Table 1.2: Top movers in HDI, non-income HDI and GDP, 1970-2010

Rank	HDI	Non-income HDI	GDP
1	Oman	Oman	China
2	China	Nepal	Botswana
3	Nepal	Saudi Arabia	South Korea
4	Indonesia	Libya	Hong Kong, China
5	Saudi Arabia	Algeria	Malaysia
6	Lao PDR	Tunisia	Indonesia
7	Tunisia	Iran	Malta

8	South Korea	Ethiopia	Vietnam
9	Algeria	South Korea	Mauritius
10	Morocco	Indonesia	India

Note: Improvements in HDI and non-income HDI are measured by the deviation from fit – how well a country does relative to other countries starting from the same point. Improvements in income are measured by the annual percentage growth rate in per capita GDP.

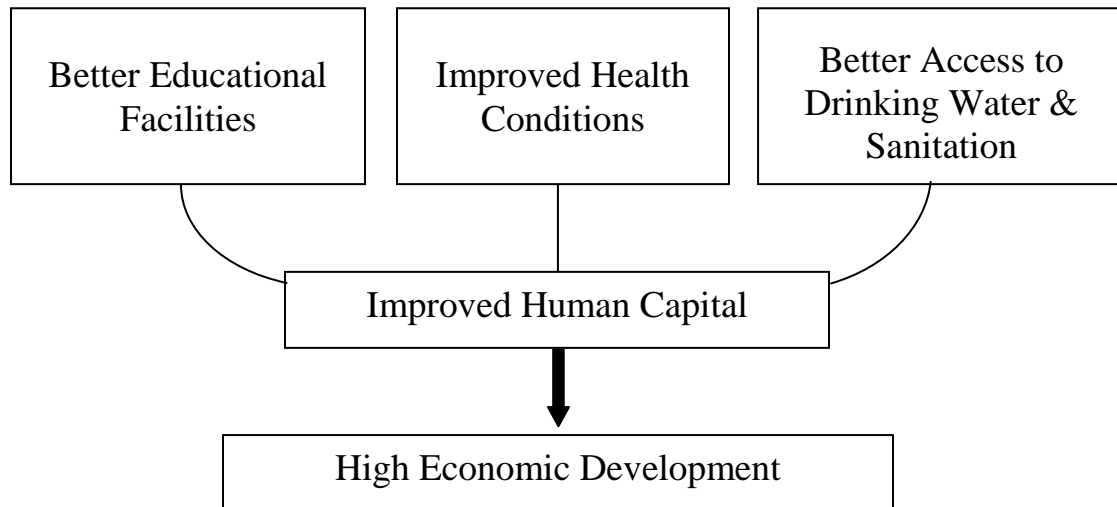
Source: Human Development Report 2010, UNDP

1.2 Social Sector and Economic Development

Economic success crucially relies on human capital – the knowledge, skills, competencies and attributes that allow people to contribute to their personal and social well being, as well as that of their countries (Brian Keeley, 2010). Social sector is perhaps the most critical area in any economy as it affects and determines the economic development of a country. Social sector is a non-economic factor which immensely affects the economic development of a country. Development of social sector enhances the capacity of an individual so that they can play a meaningful role in different social, economic and political activities. It is argued that social sector development directly leads to human development through enhanced human capabilities reflected through better knowledge, skills and improved health. Improvement in health, education and training often reinforce each other resulting in greater development. Households with better education enjoy better health and income level. They start with higher level of income and continue to grow and well equipped to exploit the opportunities coming along. Investments in education and health enable an individual to participate and take advantage of opportunities available in expanding economy. This improves both productive and distributive justice leading to overall development of the society. There is crucial link between the social sector comprising education, health and water & sanitation and economic

development of a country (**Figure 1.2**). Better educational facilities, improved health conditions and better access to drinking water & sanitation is crucial for improving the human capital and thus achieving higher economic development.

Figure 1.2: Synergy between Social Sector and Economic Development



Social sector plays a crucial role in shaping economic forces which in turn have tremendous impact on economic development of a country (Bauer, 1957). Social sector may be defined as combination of all those sectors which contribute to the enhancement of human capital. Human capital, in turn, refers to the productive capacities of a human being which helps in enhancing the income of an economy. Human capital may be defined as the stock of skills and productive knowledge embodied in people (Rosen, 1989). People enhance their capabilities by investing in themselves through schooling, training, health, information, etc. Classical economist J. B. Say asserted that since skills and abilities are acquired at a cost, they should be classified as capital. Human capital is reflected in terms of the value that markets place on the work done by individuals who have invested in themselves in varying amounts (Carnoy, 1995). The importance of human

capital for economic growth was realised through induction of these concepts in economic analysis by Theodore Schultz and Gary Becker during 1960s. Schultz perceived human capital of a country as an important factor in analysing its production possibilities. Becker (1962) reiterated that human capital is similar to physical means of production, one can invest in human capital through education, training, medical treatment and accordingly an individual's outputs depend partly on the rate of return on the human capital one owns. It implies that human capital is a means of production. Additional investment for enhancing human capital yields additional output.

1.3 Social Sector: India vs. World

The Indian economy in the recent years has emerged as one of the fastest growing economies in the world. A distinct acceleration in Gross Domestic Product (GDP) growth has occurred between the Ninth and Tenth plan period. The high rate of economic growth has been driven by acceleration in industry and services. The investment trend has also been improved with huge amount in recent times. Rapid expansion of bank credit and improvement in fiscal measures are also the evidences of high level growth in our country. However, it remains a matter of grave concern that the recent acceleration in economic growth in India has not been accompanied by equitable distribution of wealth and well being among persons and regions. It is argued that lack of requisite infrastructure, both social and physical, is a constraint for achieving the sustainable economic growth in the country for all. The central idea behind the growth and development of a country is to improve the quality of people's lives. It should lead to creating an environment for its citizens to engage in a wider range of economic as well as non-economic activities, to be healthy and well nourished, to be

acknowledged, and be able to participate in community life. More practically, development involve removing obstacles to what a person can do in life such as a person should have access to water, education, health services and enjoy economic, civil and political freedom.

The performance of India with respect to social sector has been poor as compared to most of the developed countries. India has poor outcome in most of the health indicators which has been further worsened due to the high population growth. Population growth rate in India is 1.31 lower than only Pakistan (1.55). High population growth exerts pressure on existing physical and social infrastructure undermining any efforts taken by the government to address the social sector problems. In education, average number of years of education received by people reflects the time a person has spent on attaining the education. Mean Years of Schooling for adults is the average number of years of education received by people of ages 25 and older is lowest in India (4.4 years), which is much below than Australia (12), France (10.6) and United Kingdom (9.3). The maternal mortality rate (MMR) is 230 in India against the 12 in United Kingdom and 24 in United States. Only Pakistan (260) and South Africa (410) have worst situation than India in terms of MMR. Infant mortality rate in India is also not favourable reflecting poor condition of health among children in the country. Life Expectancy at Birth, which means average number of years to be lived by a group of people born in the same year, is one of the important measures of overall quality of life in a country. It can also be thought of as indicating the potential return on investment in human capital (www.cia.gov). Life expectancy at birth is just 67.14 in India whereas it is 81.9 in Australia, 81.46 in Brazil, 78.49 in Unites States and 72.77 in Turkey (**Table 1.3**).

Table 1.3: Vital Social Indicators for Selected Countries, 2012 (estimated)

Country	Population Growth Rate	Mean Years of Schooling (Adult)*	Maternal Mortality Rate**	Infant Mortality Rate	Life Expectancy at Birth
Australia	1.13	12	8	4.55	81.9
Brazil	1.10	7.2	58	20.50	72.79
China	0.48	7.5	38	15.62	74.84
France	0.50	10.6	8	3.37	81.46
Germany	-0.20	12.2	7	3.51	80.19
India	1.31	4.4	230	46.07	67.14
Norway	0.33	12.6	7	3.50	80.32
Pakistan	1.55	4.9	260	61.27	66.35
South Africa	-0.41	8.5	410	42.67	49.41
Sri Lanka	0.91	8.2	39	9.47	75.94
Turkey	1.20	6.5	23	23.07	72.77
United Kingdom	0.55	9.3	12	4.56	80.17
United States	0.90	12.4	24	5.98	78.49

* Figures are for the year 2011

** Figures are for the year 2008

Source: <https://www.cia.gov> accessed on March 25, 2012

Emphasis on human development along with economic development has shifted the focus from quantitative growth to qualitative growth. HDR 1996 clearly asserts that a determined effort to improve human capabilities through provision of better social services can help transform the prospects for economic growth. An investment in social sector is crucial to bring the country upwards and achieve higher economic growth. These investments determine the social sector outcome of the country. An analysis of country-wise social sector expenditure provides insight into the varied outcomes in social sector among countries. The sector wise expenditure as percent of GDP incurred by different country reflects the importance attributed to the sector. Investments made in the providing health, education and other basic

services have positive impact on the human development outcomes. The pattern of expenditure incurred by various countries is the reason behind the different levels of health and education outcome. In India, a meagre amount of GDP is being spent in health (2.4) and education (3.1), whereas the same figure is as high as 9.7 and 6.8 in Norway. Experience of number of countries like Australia, Norway, United States, etc. shows that channelling significant amount of financial resources in social sector greatly enhances the human capital and hence the overall development of these economies (**Table 1.4**). In the knowledge society, access to opportunities to acquire needed knowledge, skills and competencies is essential for social progress and economic growth (OECD, 1998). A country with higher investment in research and development, educational facilities, health services are expected to achieve higher future returns.

Table 1.4: Social Sector Expenditure as Percent of GDP, 2009

Country	Health Expenditure	Education Expenditure
Australia	8.5	4.5
Brazil	9.0	5.08
China	4.6	NA
France	3.5	5.6
Germany	8.1	4.5
India	2.4	3.1
Norway	9.7	6.8
Pakistan	2.6	2.7
South Africa	8.5	5.4
Sri Lanka	4.0	NA
Turkey	6.7	2.9
United Kingdom	9.3	5.5
United States	16.2	5.5

Source: <https://www.cia.gov>

1.4 Social Sector Scenario: Bihar vis-a-vis Major States

In the six decades of economic planning, India has undoubtedly registered high economic growth and increase in per capita income at national level. Despite this quantitative expansion of growth in the country, socio-economic inequalities between regions and people have sharpened over the years. There are still large sections of the economy that have little or no access to basic social services like education, health care, clean drinking water, shelter, etc. In this scenario, the status of development of social sector in a backward state like Bihar may not be expected to be satisfactory. The poor socio-economic infrastructure and less effective existing government facilities vis-a-vis other states of India may be assessed from the comparative analysis of different indicators. The present section finds out the development status of social sector in Bihar with respect to other Indian states.

Bihar is India's third most populated state with a total population of 83 million and accounts for one-seventh of India's population below the poverty line. Bihar's performance lags seriously behind national trends in almost all indicators. Income growth and consumption levels in Bihar has lagged behind and thereby widened the gap between Bihar and rest of India. The HDI ranking of the state is among the lowest at 21 reflecting the poor human development in the state. According to the latest poverty estimates of the Planning Commission, Bihar is one of the most poverty stricken states of India. During the year 2004-05, 54.4 per cent of the people in the State are living below poverty line, which is way above the national figure of 37.2. The situation of the state in terms of health and education is not satisfactory with low levels of life expectancy at birth and enrolment ratio. The life expectancy at birth for female in Bihar is 60.4 against the national

average of 64.2 years. The prevailing infant mortality rate reflects the health condition of the children. The IMR in Bihar is 48 against the 44 for Gujarat, 38 in Karnataka, 13 in Kerala and 28 in Maharashtra. The situation is equally unsatisfactory in the education sector. The Gross Enrolment Ratio (GER) between age group 6 - 13 years at all India level was 99.8 against 88.9 for Bihar in the year 2008-09. Further, the situation of pupil-teacher ratio in the state is also adverse. It is found that the pupil-teacher ratio for pre-primary school was as high as 80 in Bihar, whereas this was only 32 in case of Andhra Pradesh, 28 in Assam, 33 in Odisha, 35 in Punjab (**Table 1.5**).

Table 1.5: State-wise Socio Economic Indicators

States	HDI Ranking 2007-08	Poverty Headcount Ratio (%) 2004-05	Life Expectancy at Birth (2002-06)		Infant Mortality Rate 2010	Gross Enrollment Ratio (2008-09)	Pupil-Teacher Ratio (2009-10)	
			Male	Female	Per 1000 live births	6-13 years	Pre-Primary/ Primary/ Jr. Basic School	Middle/ Sr. Basic School
Andhra Pradesh	15	29.9	62.9	65.5	46	88.9	32	27
Assam	16	34.4	58.6	59.3	58	97.6	28	21
Bihar	21	54.4	62.2	60.4	48	88.9	80	53
Gujarat	11	31.8	62.9	65.2	44	108.2	30	36
Haryana	9	24.1	65.9	66.3	48	83.4	52	41
Karnataka	12	33.4	63.6	67.1	38	100.6	18	29
Kerala	1	19.7	71.4	76.3	13	95.2	30	26
Madhya Pradesh	20	48.6	58.1	57.9	62	132.2	41	32
Maharashtra	7	38.1	66	68.4	28	97.6	33	32
Odisha	22	57.2	59.5	59.6	61	106.9	33	27
Punjab	5	20.9	68.4	70.4	34	71.8	35	14
Rajasthan	17	34.4	61.5	62.3	55	105.4	44	28
Tamil Nadu	8	28.9	65	67.4	24	117.2	43	49

Uttar Pradesh	18	40.9	60.3	59.5	61	89.4	67	78
West Bengal	13	34.3	64.1	65.8	31	91	34	33
All India	0.467	37.2	62.6	64.2	47	99.8	42	34

Source: Economic Survey, 2011-12, Ministry of Finance, Government of India.

The above analysis clearly asserts that Bihar is one of the most backward states in India. At country level, Bihar's position is undoubtedly at lower side. Now, after establishing this fact, there is need to examine the pockets of extreme backwardness within the state. The list of backward districts in India compiled by various committees based on different methodology has established that Bihar contains most number of backward districts among all other states. Dr. N. J. Kurian in his study conducted in 2001 deduced that Assam, Bihar, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh and West Bengal contributed the maximum or 49 per cent of the worst performing districts. The study derived that top 200 best performing districts do not belong to these states. The Sarma Committee constituted in 1996 prepared a list of 100 most backward districts of India, in which Bihar was leading the race with 26 districts in total. Bibek Debroy and Laveesh Bhandari in their report titled District Level Deprivation in the New Millenium (2003) listed 69 most backward district of India. They defined the most backwards districts as those whose residents are the most deprived in terms of health, education and poverty. The study identified that Bihar contains highest number of most backward districts (26) in the country (**Table 1.6**). Uttar Pradesh is next to Bihar with 13 districts in the list. A combination of inherent socio-economic conditions, geographical characteristics, poor governance, inadequate infrastructure and public inaction has contributed to the poor conditions of these districts.

Table 1.6: State-wise Number of Most Backward Districts in India, 2003

State	Number
Arunachal Pradesh	3
Bihar	26
Jharkhand	10
Karnataka	1
Madhya Pradesh	6
Odisha	10
Uttar Pradesh	13
All India	69

Source: District Level Deprivation in the New Millennium, 2003

It is evident from the above analysis that the state of Bihar is lagging behind in most of the critical socio-economic indicators. Interestingly, Bihar is one of those states which gave leadership and contributions in the freedom struggle. Also, post-Independence people from Bihar contributed most significantly to shape the destiny of the country. But, the development status of the social sector in the state is pitiable lower than the national level and its management is also in a mess. Apparently, the basic socio-economic infrastructure in Bihar is relatively poor than other states of the country. Bihar constitutes more than eight per cent of the India's population and ignoring the welfare of these people will greatly hamper the overall growth of the country. In order to achieve faster, sustainable and more inclusive growth as visualized in the approach paper to Twelfth Five Year Plan, there is an urgent need to bring the people of the state of Bihar at par with people of other states.

1.5 Public Private Partnership: A Way Out

Provision of public services and infrastructure has traditionally been the exclusive domain of the government. Government has the duty of providing social services to its entire citizen. Government initiatives in these

traditional areas continue to pose challenges in many countries. The institutional modes of delivery of public services like health and education have changed in recent years. There is a need to examine method and ways of service delivery in order to assess their potential and the possible challenges to meeting the objectives of fairness, access, effectiveness and efficiency.

Access to social services forms the core of social development activities. Delivery of social services, which aims at developing the capacity of people to work continuously for their welfare, is an essential first step towards promoting social development. As the importance of access to basic social services has risen, there is increase in interest for private sector to play a greater role in the provisioning of social services. There are several reasons for the growing importance of the private sector in the area of social development. There is growing realization that the involvement of private players or NGOs would induce competition and make the state agencies more accountable. The politico-economic factors also stresses on shifting the focus towards a private sector in the delivery of social services. Fiscal stress or budgetary burden have compelled governments in many developing countries to shift the responsibility for the financing and provisioning of public goods and welfare services from the State to the private sector. Also, there is a perception that developing countries do not have the institutional capacity to finance and deliver services at a cost and quality that are adequate to meet the needs of the consumers and that state provisioning is characterized by a high level of inefficiency and sub-standard services (Robinson and White, 1997). The need to involve the private sector and civil society in the delivery of social services also has its roots in the changing perception on governance, a critical element in promoting

sustainable human development. The governance includes the state but work in coordination with the private sector and the civil society. For a sustainable human development, it is critical to promote a healthy and fruitful interaction among all these three stakeholders. The State is responsible for creating a conducive political and legal environment, whereas, the private sector generates jobs and income. The civil society facilitates political and social interaction by mobilizing groups to participate in economic, social and political activities. Each of these stakeholders has weaknesses and strengths, good governance can be achieved only if there is practical interaction among all three.

Collaboration with the private sector or non-governmental organization (NGO) can help in plugging the gaps of availability and accessibility of the resources. Several Indian policy documents now speak of the need to co-opt the private sector to meet the commitments of the government for the inclusive growth. This has led the Government's across the world to increasingly look at the private sector to supplement public investments and provide public services through Public Private Partnerships. It is expected that since the government already has an extensive infrastructure in place, the private sector will be able to assist and complement it with the input of other resources to make the system deliver effectively and efficiently. The establishment of public private partnership (PPP) is seen as a mutually beneficial arrangement, wherein the public sector receives an infusion of capital and skilled human resource, and corporate houses and private foundations get government backing and consequently, credibility as a partner in achieving developmental goals. The PPP can be a preferred approach due to various reasons including its ability to attract private sector fund and bring efficiency in operation and

management. However, despite its various advantages, PPP approach has not made sufficient progress in the country and has been mostly confined to a few sectors like Highways and Ports. For a number of economic, social and political reasons, private sector involvement in providing social services is slow to develop and thus uneven. Major reasons for such selective progress of PPP approach have, in turn, been ascribed to weakness in policy framework at state levels and lack of capacity amongst both public institutions and private sector for diverse projects requiring efficient process management from the former and funds and expertise from the latter.

1.6 Justification of the Study

Almost all economic and social services provided by Government are open to public private partnership; the question is where the government handling the delivery of services are prepared to experiment and invite private players.

The State of Bihar is in a greater need of modern infrastructure across almost all sectors of the economy and a greater adoption of PPP approach would be necessary to meet huge requirements of the State. However, the involvement of private players in the provision of public services is particularly slow in Bihar. The state accounts for only around six per cent of total approved PPP projects so far. As per the State Annual Survey Report for 2006-07, the total plan outlay for the 11th Five Year Plan (FYP) for the State is around Rs. 58,000 crores. Of this, the central assistance is expected to be around Rs. 20,000 crores, only accounting for 35 per cent of total outlay. Thus, the State faces the challenge of mobilization of around Rs. 38,000 crores over the Eleventh FYP. Also, the State's revenue receipts are only 20 per cent of its current expenditure, as the balance is met by its share

of taxes and grants from the Central government. Thus, the State as of now is highly dependent on the Centre for its financial sustenance. Further, the State has only ten per cent of its population living in urban areas against the national average of around 28 per cent. The industry even today accounts for merely three per cent of Gross State Domestic Product (GSDP) against national average of 20 per cent. These factors have also meant that there is neither enough experience nor capacity in the State Institutions to undertake large infrastructure projects and nor the organized private sector is in a position to bring in requisite investments.

In view of the above facts, and to push resurgent Bihar on accelerated growth mode, the relevance of PPP approach to the State economy has become more crucial. The PPP approach, in the context of the State of Bihar, would thus, be required not only to supplement state resources but also to bring in best practices to increase operational efficiency. It is therefore, important to examine the viability of PPP model in the context of Bihar.

The success stories of PPP initiatives in different countries and different states in India have shown that the identification of a clear task including identification of the appropriate target population, the scope of partnership, selection of the right partners and appropriate model of PPP is crucial. PPP projects need to be framed on the basis of the desired outcome from the system. The main issues related to the most effective way to improve coverage, reach, quality of service and cost were discussed in the present work. The present study has been well-documented and effective as well as exhaustive study report with specific suggestions, which would definitely be helpful in formulating policy for both public and private sector to work complementarily for the overall development of the Bihar State.

In brief, the study comes up with relevant suggestions and recommendations to involve private players in providing basic social services to the people of the Bihar.

1.7 Organization of Thesis

Chapter 1 introduce the topic and highlight the relevance of the present study. Before embarking on research work, study of relevant literature carried out by different academicians and organizations in different capacity is necessary. Accordingly, chapter 2 presents the assortment of literature review available through various sources. Moreover, the research methodology to be used for carrying out the research study is explained in the same chapter. The study of current status of social sector and the problems encountered with special reference to Bihar state has been presented in the chapter 3. This chapter also involves the analysis of the various indicators related to social sector across the state there by bringing out the specific problems and challenges posed in the state. Understanding of various aspects related to the arrangement of public private partnership being an important task; these issues are discussed in the chapter 4. Different models of public private partnership and the related challenges and opportunities for the government as well as the private players are discussed thoroughly in the same chapter. A critical analysis of success as well as failure of public private partnership being implemented across the world has been documented in the chapter 5. This has particularly focused on the PPP model operational in different parts of the country. The lessons from case studies have been documented in chapter 6. This chapter also outlines necessary guiding principles to follow while formulating the possible models to be implemented in the context of Bihar. Finally, chapter 7 highlights the

main findings of the study and concludes the dissertation. Overall, the thesis intends to analyze the various critical issues related to PPP arrangement for the provision of public services in the state of Bihar.

CHAPTER 2

REVIEW OF LITERATURE AND RESEARCH METHODOLOGY

This chapter presents the relevant work done over the years related to the public private partnership (PPP) in the delivery of social services. First part of this chapter critically examines the literary work carried out by the eminent persons in the field of public private partnership and reports published by different government and international agencies. In the second part, we discuss the research methodology to be used to carry out the present research in a fruitful manner. This chapter also highlights the problem and challenges as well as other issues related to the research study.

Health and education are two basic sectors that every country needs to develop. But governments in developing countries have inadequate resources for them. They face difficulties in providing quality health and education services that take into account individual and community diversity. This has resulted in a greater involvement of the private sector, including non-government organizations (NGOs), business corporations, in the finance and management of services. In many developing countries in Asia and the Pacific, the role of the private sector in health and education has become critical (Yidan Wang, 2000).

Health care outcomes in India are below the levels that might be expected even at India's specific level of development. The Indian government has recognized the need for public policy action, and is implementing a massive National Rural Health Mission (NRHM) to

improve public sector delivery of health care services, especially in poorer states, and especially to the poor all over the country. The NRHM involves substantial increases in funding, and many innovations in organizational arrangements, collaborations with a range of private sector entities.

NGOs and community groups have in many instances demonstrated their capacities in reaching the poor and disadvantaged with a multiplicity of services, ranging from motivational to educational and health-related activities. Even private businesses and corporations have established reputations in providing quality services that respond to market needs in health and education. In some cases, they have co-operated with governments in providing effective and efficient management of government-financed or subsidized services. In other cases, the private sector (both for-profit and non-profit) has addressed market needs by providing services that supplement government services. Under appropriate circumstances, forming partnerships between the public and private sectors can open up opportunities for additional resources, improved service coverage, and enhanced quality in services.

To maximize the respective strengths of public and private sectors and minimize their weaknesses, policymakers need to fully understand the possibilities and conditions for partnerships, including legal and regulatory framework, and benefits and costs that forming partnerships may involve. Though various forms of partnerships subsist in many countries in the region, there is a lack of common analytical framework for understanding partnerships.

How public and private sectors interact and how such interactions impact on access to health and education and on the quality and significance of such services are still poorly understood.

As such, as already pointed out in the previous chapter, there is a great need to undertake research on social sector development especially in education, health and water supply & sanitation sector and the possibility of their development through PPP model.

2.1 Review of Literature

In recent years the term “public-private partnerships” has commonly emerged in the economic development literature. As an institutional approach, however, public-private partnerships have a long history in local economic development policy (Beauregard, 1998; Ward, 1990). With the structural change of the economy in the developed as well as developing countries the development of economic globalization in the last two decades, have been adopting to use a wide variety of incentives to compete for mobile capital and high quality labour (McCarthy, 2000; Neilson, 1999). An exploration of a general framework of public-private partnerships helps to improve understanding of public-private partnerships. Certainly, it is important to recognize that public-private partnerships are not the same across countries, even within the developing and developed countries, in their formation and operation (Qingshu Xie & Roger Stough, 2002).

In the light of the above before penetrating to our study we need to focus on the literature available in the realm of social sector and PPP. The review of such research works will enable us to find out the gap existing in

the research, which the present study intends to fill up to some extent. Some of the research studies pertaining to our area of research are presented below.

A. M. Nalla Gounden (1967) in his paper has treated education as a form of investment. He has made no attempt to measure the contribution of education to economic growth. Educational expenditures constitute a sizeable drain on the economy and since current plans call for further increases in these expenditures, a number of critical resource-allocation problems arise. At present, India's educational expenditures are substantial and have been rising rapidly. This paper made an effort to explore the relationship between the cost and benefits of educational investment in India. Internal rates of return to investment in education in India for the year 1960-61 are estimated and compared with Professor A. C. Harberger's estimate of the rates of return to physical capital. "Net" education capital formation during the period 1950-51 to 1960-61 is also estimated at 1960-61 prices and compared with physical capital formation during the same period. Net education capital formation over a period of time can be measured by deducting losses resulting because of death, emigration, depreciation, etc. from the gross investment over the same period. The study indicates that education is not an attractive form of investment when compared with physical capital. Since the rate of return of physical capital is higher than that of education, relatively more emphasis may on physical capital investment accelerate the growth of the economy. This will, in turn, provide an expected capability for supporting needed educational investment. Within the educational system, primary education is the most attractive and collegiate non-professional education the least attractive form of investment. The rates of return are lower to literacy than to primary education, which

implies that dropouts are not economically as productive as completers. This suggests that quality of education should be improved and wastage and stagnation reduced.

An article by **Bruce L. R. Smith (1983)** explores the paradoxical shift in attitudes on public-private sector relations against the background of contemporary ideological trends. The arguments for either a massive shifting of functions to private contractors or for the federal government to reabsorb major activities now carried out by contractors are equally unconvincing. The confusion over public and private responsibilities lies at the heart of the ideological disarray and the feelings of breakdown in the contemporary political scene. Government should involve the private players but Government agencies should not become so dependent on outside staff that they are unable to chart the main directions of policy for their departments. Government should never contract out essential policymaking functions, critical aspects of strategic planning, or essential systems management tasks. Close interaction with contractors is essential to assure a mutually understood definition of the task to be accomplished once the agency enters into a contract arrangement. But this arrangement should encourage creative performance rather than self-protection and risk avoidance. The problem is to make the present system of shared responsibility among government, business, and the voluntary sector work more effectively, not to experiment with ideological solutions that would rearrange the nation's political and institutional landscapes. In the end, the best safeguard against becoming trapped by the inherited complexity of our governing institutions is to keep inventing them anew.

Steven A. Clarke (1993) in his paper outlines the experiences of the Governor's Management Review Commission in New Jersey and the

commission's performance audit of state government operations. It provides some insights into how this commission learned from the lessons of the past to create successful public-private partnerships to conduct performance audits of government operations. The audit was conducted in two phases over the period July 1990 through June 1992. The commission chose to focus on the portion of the state budget that supports state agency operations. The audit consisted of operational reviews of various departments in two phases. The commission's audits revealed many situations in which it was very difficult for managers to manage. They found many obstacles to achieving excellence. Based on findings, commission chose to emphasize the most fundamental issues and to set a framework for addressing some of the long term, systemic issues confronting state government. Commission said encouraging excellence in government should not be viewed as a short-term economic tactic and felt that a permanent and structural solution is needed. Strong commitment by the executive, independence, willingness to address tough questions, clear goals and accountability for results and ability to create partnerships are among the various prescriptions given by the commission. The commission observed that public private partnerships can be effective in reshaping government operations. To be successful, they must be well defined, focused on specific missions, careful to team public managers with private sector executives sharing common skills, and well supported by the executive who seeks to benefit from them. The performance audit made it clear that it's possible to make government work better. Nonetheless, the challenge remains great and the process continual.

Timothy Besley and Maitreesh Ghatak (1999) in their paper analyze the role of public and private responsibility in the provision of public goods. A typical public good will require many different inputs which raises the

possibility of partnerships to exploit comparative advantages of different parties. But, hold up problems due to contractual incompleteness in specifying tasks discourage separation of ownership and management. The paper also examined the role of project design or ideology as a separate non-contractible input, and the possibility of crowding out in the form of a less caring government being elected because of the presence of private providers. The findings of the paper calls for enhanced role of NGOs, who are in the last two decades, have increased their presence in the provision of a wide range of public goods.

A report by **World Bank (2000)** titled *Public Private Partnerships in Health: An Interim Report on Issues and Options* describes how most of the attention of the public sector has concentrated on service delivery whereas the private sector, in its various forms has grown to dominate most curative care services. Public sector services are large but spread thinly. The paper argues that in the aggregate, public services have disproportionately provided more benefits to wealthier Indians than to the poor. International and domestic experiences tell us that there are no simple or universally applicable solutions to shaping India's future health system. The priority of issues and choice of solutions will vary among states and over time. India's health system will need to continually evolve in response to social and political demands and to changes in illness conditions, demography, science and technology. The study highlights the urgent need for an expanded vision of the health sector, where government oversees the health system in its entirety. The biggest challenge and opportunity for government is to harness the energy of the private sector. The government must not overlook the population at large ensuring that public and private sector actors listen to and respect the public and are made accountable to it. Government thus

needs to be especially sensitive to the most vulnerable members of society and the inequities in health status, financing of health and responsiveness of the health system.

Alok Mukhopadhyay (2000) in his paper outlines the reason for extremely uneven health and development progress in various parts of the country. Over-centralized and lopsided planning, inadequate and unbalanced financial outlays, lack of accountability to communities, low moral values and very often, dereliction of duty by medical and nursing professionals plague the system. Due to the prevailing situation in the government sector, there has been an unprecedented growth of the private sector which does not provide quality health care at reasonable cost. Author urges to create an enabling climate for the voluntary sector to create to grow and work in liaison with the government for the overall development of health and improvement of environment of the country. The paper establishes that voluntary sector, though their overall presence is limited is playing a significant role in providing innovative and quality health services to the needy in remote areas. There is a need to create an enabling climate for them to grow further, especially in those pockets of the country where the overall health and development situation remains grim.

David E. Blume, Patricia Craig and Marc Mitchell (2005) in their paper highlight the associated advantage of public service provider over private provider and vice versa. The paper highlighting the strengths of public and private players calls for innovative partnership between them to tackle the problems in health and education. There may even be collateral benefits when public and private organisation starts working together. The paper suggests that public sector is most naturally suited to addressing issues involving communicable diseases, the availability and quality of information

about health and health care, and the establishment of viable health insurance programs. Private sector especially well suited to detect and treat many high-cost non-communicable diseases and conditions. In education, public sector is well placed for providing primary education whereas private sector is more suitable in delivering quality tertiary education. There is room for partnership with the private sector to improve the delivery of education, but it should be overseen by the government. The public sector must work closely with private providers to ensure that quality and equity are maintained (as well as promote the generation and dissemination of good quality information about the services provided). Again, technical considerations provide useful guidelines for addressing these issues. Political considerations also matter but these vary too widely across countries to support useful generalizations. PPP are currently underused and offer new ways to tackle what can seem intractable problems.

UN Policy Paper No. 4 titled ‘The emerging role of the private sector in delivering social services in the ESCAP region’ (2001), illustrates that as the importance of access to basic social services has risen, countries of the region have looked to the private sector to play a greater role in the provisioning of social services. There have been several reasons for the growing importance of the private sector in this important area of social development. Faced with fiscal stress, Governments in many developing countries find it attractive to shift the responsibility for the financing and provisioning of public goods and welfare services from the State to the private sector (including voluntary sector). The report highlights politico-economic situation and changing perception on governance as the primary reasons for promoting PPP in social sector. In addition, there is a perception that developing countries do not have the institutional capacity to finance

and deliver services at a cost and quality that are adequate to meet the needs of the consumers and that state provisioning is characterized by a high level of inefficiency and sub-standard services (**Robinson and White, 1997**).

Frank Allen and Finbarr Bradley (2002) in their article argued that voluntary agencies that deliver public services and State agencies that fund them should consider entering into formal agreements similar to those now being negotiated with private parties in the case of capital infrastructure projects. A clear benefit would accrue from the negotiation process where both parties would be required to clarify their respective goals and responsibilities relating to the contracted services. During the implementation phase, the voluntary agency could concentrate on providing the service itself and not have to worry about repeated applications for funding subject to the uncertainty of continued support. From the State's perspective, it gets a deliverer close to the action and a clear benchmark against which the performance of the voluntary agency can be measured. As long as original commitments are being honoured, the State agency has the assurance that the service is being provided properly over the period of the agreement. Such Public-Voluntary Partnerships would bring the benefits of innovation, flexibility and long-term planning to the voluntary sector, widely recognized as beneficial in the provision of capital infrastructure by the private sector. However, there are limitations in the use of PPPs. For instance, an initial learning curve means that it often takes a long time to establish proper structures and to negotiate individual deals. Even with these limitations, the evidence on PPPs is generally positive and they undoubtedly offer significant potential for the public sector to deliver a range of quality services in innovative, less expensive and more exciting ways.

Girish Kumar (2003) highlights the success of public private partnership initiative in providing health services introduced in Madhya Pradesh under the name of Rogi Kalyan Samiti. He specifically talked about the success achieved in the Badnagar tehsil of the state. Caught in the sticky situation of shrinking budget on the one hand and growing demands for catering to the health need of ever increasing numbers of people on the other, Madhya Pradesh governments resorted to the concept of public-private partnership (PPP). Rogi Kalyan Samiti loosely translated as Patients' Welfare Society seeks partnership of all concerned actors at the local level to raise funds for the upkeep of the public hospitals and, in turn, ensures their participation in the management of health services. This includes administration at the local level, charitable organizations, donors, leading citizens of the area, people's elected representatives as well as hospital staff. This scheme is all the more unique in the sense that unlike in other states, where partnership has been sought from market forces (excepting the areas where NGOs are being involved), the RKS seeks direct involvement of the users (people) and service providers (doctors, para-medicos) in running the public hospitals. Thus, if the motivational factor in the case of former is profit, the latter instance is of meeting the social goal and, by extension, raising the social capital. The RKS has made the government hospital more open to citizen's involvement in decision-making. On the other hand, the functioning of the government hospital has become more transparent, accountable and sensitive to the needs of patients. The successful innovations carried out both at Badnagar and Ujjain has come with little imagination and limited intervention. Creating space for the community-centered actions, encouraging experiments and engaging people in meaningful participation brought efficiency in delivery of health services.

Maitreesh Ghatak (2003) in his paper has set out a framework for thinking about the responsibilities of the state and the voluntary sector in providing inputs/finance to public projects. Under the reasonable assumption that contracts are incomplete and hence subject to hold-up, we have a theory of who should own and provide inputs as a function of comparative advantage in production and relative project valuations. The paper showed that citizen's willingness to pay is not sufficient for partnerships when there are limits to contracting possibilities. The model developed delivers the presumption that responsibility for provision should reside with the party that cares most about the project. However, there are some important caveats to this, when hold up, problems are severe and when the private sector and/or government have ideological differences on project design. The framework developed provided a basis for thinking systematically about how the private sector can be harnessed in provision of public goods.

Ismail Radwan (2004) in their paper says that while the root causes of poor health outcomes are poverty and low levels of education, government stewardship of the health sector bears some responsibility. Public sector health programs in India have faced well-recognized problems such as inadequate access by the most vulnerable groups, poor quality and coverage of primary and secondary facilities and until recently an excessive focus on sterilization and inadequate focus on maternal and child health. The private sector has moved in to fill this gap. Private sector facilities have grown rapidly over the year. The private sector is providing an increasing share of primary health care and that large segments of the poor are using the private sector. The study analyzed successful case studies from three states of India namely Andhra Pradesh, Bihar and Punjab. Andhra Pradesh

contracted out 192 urban health centres to non government organisations for delivering services to the residents, community mobilization and behaviour change communication to encourage greater take-up of services. In their first few years of operation, the contracted urban health centres have shown an impressive performance. In Bihar, Janani has been operating on a franchising model since 1996 with an aim to provide family planning products to vulnerable communities. Janani sells pills, condoms and other family planning products such as rapid test services for pregnancy, blood pressure and diabetes etc. in urban areas through shops and pharmacies and in rural areas through a network of rural medical practitioners. Although the model has been very successful in expanding outreach of family planning services to rural areas, it has not stopped the RMPs from continuing to practice quackery. Punjab established Punjab Health Systems Corporation (PHSC) to run the secondary health facilities outside the remit of the stifling government bureaucracy. User charges were introduced at all the facilities and the revenue generated was retained at the facility level to provide drugs, patient facilities, equipment and building maintenance. The study suggested policy measures as (i) the government should strengthen its PPP capacity, (ii) contract out the primary health centres, (iii) devise a strategy for improving the performance of informal providers, and (iv) Promote sustainable and affordable health insurance.

Antonio Afonso, Ludger Schmuknecht and Vito Tanzy (2005) tried to compute public sector performance (PSP) and public sector efficiency (PSE) indicator using various indicators and sub indicators. The measurement of public sector performance defined as the outcome of public sector activities and public sector efficiency defined as the outcome relative to the resources employed, however, is still very limited. The objective of

this paper is to provide a proxy for measuring PSP and PSE. To do this authors have put together a number of performance indicators in the government's core functions. These include the summary functions defined by Musgrave (allocation, distribution, stabilization) and a number of specific indicators that reflect the rule of law and promote equality of opportunity in the market place. They set these indicators in relation to the costs of achieving them. Then they derive simple performance and efficiency indicators for 1990 and 2000 for the public sectors of 23 industrialized OECD countries. The input and output efficiency of public sectors across countries is then measured via a non-parametric production frontier technique to estimate the extent of slack in government expenditures. Study used a number of socio-economic indicators as proxies for performance, and total spending and a number of spending categories as proxies for resource use. Study found moderate differences in the PSP indicators across industrialized countries. Unsurprisingly, countries with small public sectors report the "best" economic performance, while countries with large public sectors show more equal income distribution. Countries with small public sectors report significantly higher PSE indicators than countries with medium-sized or big public sectors. All these findings suggest diminishing marginal products of higher public spending. So, there is a case for diverting public expenditure and involve private players for the betterment of administration and delivery of services.

Gabriel Tati (2005) in his article discusses the dynamics of a public-private partnership (PPP) in urban water supply with special reference to Congo-Brazzaville, and assesses how far PPPs are a viable policy instrument for addressing the inadequacies of state-owned enterprise. Article examines some of the PPP arrangements and discusses the benefits and obstacles that

arose. The case studies reported in this article suggest that to achieve the shift from a supply-driven to a demand-led orientation in water supply, PPPs must take into account the economic and social impacts of diverse consumption patterns, and they must also assess consumers' needs. Being able to do this depends on a clear definition of roles and responsibilities and the recognition and mitigation of financial risks. Risk transfer is a key ingredient of a successful PPP, which depends on an appropriate emphasis on competition and the opportunity to contest a bid. The lack of attention to these three elements-risk transfer, competition, and contestability-eroded the PPP's capacity to respond to new urban situations and public needs in relation to water supply. This exclusionary approach affected the poor in particular. In addition, the private companies failed to deliver services (i.e. make sufficient water connections), in many cases simply because residents lacked the financial means to translate their needs into a market demand. Also, the government failed to meet its responsibility to limit the possibility of bankruptcy and the discontinuity of service delivery by the two private sector partners, which would have required frequent monitoring of their finances and activities. In economic terms, it would have been preferable to have quantified the demand, for example through appropriate market research, before embarking on the PPP. Thus, right from start, the PPP should lay special emphasis on the availability of reliable information about the demand for water connections, competition, public perceptions of the social importance of the service, and counter-productive relations with the regulating body. Addressing these problems could have resulted in the successful public private partnership in water supply provision.

Swati Jha and **Shiffon Chatterjee (2005)** have studied the involvement of private players in education sector. They have done the field

study of Madangir (New Delhi), one of the sites where Minimally Invasive Education learning stations were installed. It encourages children to learn on their own, with minimal or no intervention. Children are provided with free access to computers in an open outdoor location. The informal environment enables children to acquire computer literacy, enhance their academic levels and imbibe other life skills. This project is an illustration of a public-private partnership between the Government of National Capital Territory of Delhi (NCTD) and NIIT Ltd (India's leading private sector corporation offering IT education, training and global IT learning solutions) to overcome digital illiteracy. This project shows that there exists a vibrant private sector which has resources and the desire to undertake social responsibility. This sector is also coming up with innovative approaches to overcome barriers to education and is targeting the have-nots.

Hyoung-Sun Jeong (2005) in his paper examined the changes in the Korean health care system invoked by the reform in the latter part of 2000 in regard to the separation of drug prescription and dispensation (SPD), especially from the point of view of the public-private financing mix. In Korea, private providers are responsible for the provision of the greater part of medical services. Public sector's involvement on the demand-side focuses mainly on the medical fee schedule and the list of National Health Insurance benefits. The SPD reform was to separate the function of prescribing drugs from the function of dispensing drugs, attributing the former exclusively to doctors and the latter exclusively to pharmacists. The main goals suggested by the Korean government were to reduce the over-use of drugs, to improve patient rights to information, and to improve the efficiency of the pharmaceutical industry and drug distribution. Due to reforms public health expenditure shared in total health expenditure

increased sharply from 1999 to 2001. On the other hand, the share by household's out-of-pocket payment decreased by over time. More in-depth observation reveals that the increase in public share during the SPD reform was mainly driven by the increase in financing through social security including the government's indirect payment to the providers through subsidizing contributions for regional insurers. From the perspective of the public private mix, the reform has had a positive overall effect on the Korean health care system in that it has augmented public funding.

Dr. Kirit Parikh (2006) says that public investible resources are limited and that resources for creating infrastructure have to be found in a variety of ways. One of the most attractive way for building infrastructure, both physical as well as social infrastructure like health and education would certainly be public private partnership under which large amount of private resources can be mobilized. The private sector can mobilize new technology and can bring in quality management and provide services perhaps faster and at a lower cost. However, private sector is profit motivated and it is not natural for a private corporate sector to have that kind of social responsibility. Therefore, we need to create an environment in which private sector's profit motive is satisfied. At the same time public sector's requirement that service are given to everyone and that universal services obligation is also fulfilled and we get the quality of public goods that we want. We need to create a public private mechanism and an environment in which we can combine the best of both and can benefit from the public sector's strength in identifying desirable public goods and areas in which investments are to be made and yet have the private sector's ability to execute projects and maintain them in an efficient way. The basic idea here is that there are risks and one need to design strategies in such a way that

minimizes the risks and decides that who will bear the risk and the type of risk involved. We need to set to up rules and transparent structures so that disputes are minimized and are settled easily. Thus, public private partnership can be very useful but is not an easy and simple mantra to solve all problems. It is necessary to give some deep thought and generate creative ideas.

A. Venkat Raman (2006) in his paper pointed out those well documented deficiencies of the public health system could be overcome only by radical reforms in the health sector. Due to the deficiencies in the public sector health systems, the poor in India are forced to seek services from the private sector, under immense economic duress. The study critically reviewed public private partnership projects through examining contract documents, government orders, memoranda of understanding, and other documents. The study also compiled the feedback from different stakeholders, including the patients, public and the private partner officials. The study analyzed that there is no pattern to indicate whether the public-private partnership as a policy option was guided by donor agencies or due to compulsions of resource constraints or due to competitive bureaucracy. Visionary leadership, social entrepreneurship, relationship based on trust between the stakeholders are equally important for successful partnerships. Government fails to deliver quality social services due to lack of basic administrative capacity and hence government must try to improve this aspect of governance. This should be followed by policy pronouncements and then proven partnership ideas.

M. Ali, C. Miyoshi and H. Ushijima (2006) evaluated the emergency medical services (EMS) based in Islamabad, Pakistan. Rescue-15 is an innovative EMS collaboration project between the police, the private sector

and the community. Data from Rescue-15 were used for systems analysis. The institutional setup, private–public partnership, client satisfaction and sustainability issues were examined. The access and efficiency of EMS were assessed in terms of ambulance response time. Primarily, systems analysis showed community participation to explain the project’s strength. Since its establishment, the project has been meeting its own recurrent expenditures without levying an extra burden on the Government. Sustainability issues such as amendments to legislation have been addressed at departmental and governmental levels. Data analysis showed that rescue time is, on average, 10.4 minutes with standard deviation of 2.6 minutes. A client survey also demonstrated user satisfaction and increased confidence in the service. This EMS programme exemplifies the potential of public–private partnership involving the police and the private sector in project implementation and management in a developing country with scarce resources. This initiative to involve the public and the private sector may provide a model for implementation of such services in other resource poor developing countries, which may in turn facilitate realistic solutions for better pre hospital care in developing countries.

David Martimort and **Jerome Pouyet (2006)** in their paper argue that even defenders of full privatization schemes view privatization as an excessive response to the inefficiency of the public sector (if any) even when privatization is accompanied by a convenient regulatory environment. There should be a more pragmatic approach which consists in promoting efficient (or at least as efficient as possible) partnerships between the public and the private sectors for the provision of major services and public goods to the general public. Engagement of private players involves two different activities, first, to build some infrastructures and second to manage those

assets as efficiently as possible. Paper argues that only tasks where the private sector has a comparative advantage should thus really be delegated to the private sphere. The presence of a production externality between building and operating assets raises the issue of the optimal organization of these tasks. Bundling allows for better internalizing this externality and improves incentives when the externality is positive, thereby increasing welfare. By contrast, when the externality is negative, unbundling reduces agency costs and is socially preferable. However, an incomplete contracts framework where contracts cannot depend on the quality of the infrastructure restores a role for the allocation of ownership. Giving ownership of the assets to the builder improves his incentives to enhance the quality of the infrastructure. If ownership does not confer the builder with enough incentives to improve this quality and the externality is positive, then bundling might be used. Depending on the private benefits that the builder withdraws from ownership and the risks associated to the different tasks, the public private partnership – bundling and builder ownership – might outperform the more traditional form of public procurement – unbundling with government ownership.

Agnieszka Cenkier (2008) outlines that public-private partnership is a delivery model for new infrastructure to meet social needs that should only be used where it can be demonstrated that it offers greater value for money for the public sector compared with other forms of procurement. Private sector should only be involved in building and maintenance of public infrastructure if it has such expertise to deliver that can be expected to offer value for money. The appropriate sharing of risk is the key to ensuring that value for money benefits in public-private partnerships are indeed obtained. Transferring risks to the private sector is not an end in itself but it has to

force private investors to create a better outcome. It is a key issue to ensure value for money performance in public-private partnership.

D. R. Prasada Raju (2008) examines the small community based plants producing potable water for villagers set up by Byrraju Foundation in Godavari river delta region. The foundation analyzed that only about five per cent of total water supplied is used for drinking purposes. They set up small water treatment plants called Sujala Plants to provide quality water conforming to WHO drinking water standards at affordable costs. A Panchayat-public-private partnership was formulated under which trained rural youth were involved to operate the plant. Initial costs of setting up the plant were borne by the foundation while to ensure its sustainability, the cost of operation and management was covered by the beneficiaries through user charges for the consumption of water. This initiative jointly undertaken by Byrraju Foundation, Gram Panchayat, the village community, individual donors, corporate and philanthropic organizations is an example of providing social services to the villagers. Sujala water is distributed free of charge to schools, health centres, the aged, panchayat office and so on. The success of this initiative can be gauged by the fact that the dispensaries run in villages served by Sujala water reported significant drop in patient visits on account of clean water.

Irina A. Nikolic and Herald Maikisch (2008) study provide an overview of the topic of public-private partnerships (PPPs) and public-private collaboration (PPC) in the health sector, the key types of PPPs and PPC encountered in practice, the associated benefits and risks, and good practices for ensuring success. The study also included nine recent case studies from European experience that illustrate these considerations under specific project circumstances. The study draws some lessons from these

case studies for success of the public private partnership projects. These includes clear rules defining each partner's risks and responsibilities and dedicated experts on both sides and having experience in the country and/or region. Quality assurance and performance monitoring should be ongoing and feed into improved management. Also for effective project management, key lessons include the importance of continuity within the planning team, transparency and communications between partners, careful definition of targets and budget constraints for each project phase and the importance of coordination and milestones throughout implementation.

Bin Chen and Y. Stephen Chiu (2009) in their paper examined the proper scope of public-private partnerships in the context of a project consisting of two tasks, such as construction and operation of a facility. The focus of analysis has been the role of task or investment interdependence, i.e., the two investments is either complements or substitutes. Whether the operation investment is non-contractible or interim contractible, we find that investment interdependence is a determinant of the optimal PPPs. In general, while integration is favored by the cost-reduction effect of the building investment, it is disfavored by investment complementarily. The theory developed in the paper thus provides an alternative scenario in which the phenomenon can be explained. The paper also focused on multitasking and contractibility; in particular, the authors adopted an incomplete contracting approach. It is clear that risk and risk attitude, adverse selection, and moral hazard are all important issues that deserve further studies in order to better understand PPPs.

Stephen Gray, Jason Hall and Grant Pollard (2010) in their paper questions the entire PPP framework and analyzed the two key features of a PPP arrangement which are (a) that government will make a series of cash

payments to the private sector, usually over a long concession period; and (b) that the risk (particularly the systematic risk) of the project is shared between the government and private sector. Paper argues that governments must determine whether the payments to be made under the PPP represent value for money relative to the cash flows that would be involved with traditional or alternative government procurement options. Applying standard valuation framework based on the Capital Asset Pricing Model (CAPM), in the context of PPPs, it has been argued that the standard framework produces a paradox whereby government appears to be made better off by taking on more systematic risk. In this paper, it was demonstrated that the proposed approaches suffer from internal inconsistencies and produce illogical outcomes in some cases. Also there is no problem with current accepted theory, and that the apparent paradox is not the result of a deficiency in the current theory, but rather is caused by its misapplication in practice. In particular, it was established that the systematic risk of cash flows is frequently misestimated, and the correction of this error solves the apparent paradox. In this regard, paper show that results are consistent with the substantial 1970s and 1980s literature on the discounting of cash outflows – a literature that was apparently ignored when PPP evaluation frameworks were developed.

S. Ping Ho (2010) in his paper rightly observed that in PPPs, conflicts and strategic interactions between PPP promoters and governments are very common and play a crucial role in PPPs. Complicated issues like opportunisms, negotiations, competitive bidding, and partnerships have a deep impact on the understanding of both governments and promoters. This paper particularly focused on the opportunism problems and the determinants of PPPs as a governance structure. Through the game theory

modelling, these problems are abstracted to a level that can be analyzed. The model identified two major opportunism problems commonly seen in PPPs, namely, the unbalanced profit structure problem and renegotiation/hold-up problem. These two issues have critical impacts on whether PPPs are a suitable governance structure for a specific project. To address the problem, the paper presented two approaches that aim to restore the efficiency due to the opportunisms in PPPs. In the first approach, the promoters try to send signals to the government to signify that they are the long-term profit oriented type promoters. In the second approach, the government try to use screening strategies to discourage the opportunistic, short-term profit oriented promoters from participating in PPP projects. The paper argued that the slow learning curve of governments and the fast learning curve of promoters tend to render the interactions off the equilibrium and, thus, limit the effectiveness of signalling and screening strategies. Thus, the focus of whether PPPs can be a good governance structure for a particular project turns to those factors that affect the propensity of opportunisms in unbalanced profit structure and renegotiation/hold-up.

The review of literature covers various aspects of PPP in India and in other countries as well. But, it fails to analyze the reasons and need for PPP in providing social services. The review of the related literature clearly demonstrates that not much effort has been made to examine the involvement of both private and public sector together for the development of economically backward states like Bihar. Though, plethora of studies have been conducted on the related theme but very little has been done to identify the possible areas and incentives for private sectors to come forward with the public sector in the process of development of this backward State.

The present study will try to fill the gap in research in this field and come with suitable policy recommendations. It is expected that by following the suggestions coming out of present study will provide a starting point for both public and private players to collaborate with each other in providing social service delivery to the people of the state of Bihar.

2.2 Research Methodology

This section discusses the research methodology adopted to carry out the present study. The research objectives and different tools used in this study have been outlined below.

2.2.1 Research Objectives

Delivery of social services in an efficient and effective manner is crucial to achieve the economic development. Many concerns are raised about the method and manners the public services being provided by the public authority to its citizens. The present study intends to examine the delivery of social services in the state of Bihar. The study examines the factors that facilitate and/ or constrain the delivery of services in an effective way. The government in many countries involved private players to address the issues pertaining to delivery of public services. The experiment of involving private players undertaken by various governments all over the world exhibit mixed results. Some public private partnership projects in the sphere of social sector achieved success whereas some failed in achieving the desired outcome. The innovative public private partnership (PPP) is attractive to the Government not because of its assumption of bringing value for money, but because it provides the government the scope to access the additional sources of capital which is not available to the traditionally procured projects. However, many problems like incomplete contract, misallocation

of risks, institutional deficiencies, etc. could cause failure of the partnership both from government and from private sector.

Overall, the thesis revolves on the issues like: how to achieve successful public private partnerships within social sector in Bihar, which means what are the favorable and pleasant environment required for applying public private partnerships in the state and the risks involved there in, and other critical issues related to PPP. In this backdrop, the main objectives of the present study are as follows:

- (i) To evaluate and identify the benefits relating to PPP
- (ii) To analyze incentives for private player to come in the context of PPP and to identify the deficiencies in present policy framework for implementing the PPP in Bihar
- (i) To understand the critical issues and concerns related to PPP for the development of social sector in Bihar specifically in the development of education, health and Water & Sanitation.
- (iii) Finally, to outline the summary conclusions of the study with policy suggestions.

2.2.2 Hypothesis

The study has the following hypothesis:

- (i) Involvement of private players helps improve health, education and water & sanitation facilities.
- (ii) PPP helps in improving the delivery of social services in efficient and timely manner.

2.2.3 Data Collection

Keeping in mind the research objective and in order to carry out the detailed study of the subject all the possible developmental indicators has

examined. The study is mainly based on secondary source of information. Data was collected on the following aspects, though the list is not exhaustive.

- (i) Socio-economic and demographic indicators
- (ii) Different parameters of infrastructure in the field of education, health and water & sanitation.
- (iii) Projects available with the state government, running or completed.

Relevant data was collected from various published and unpublished sources viz. various publications of Central and State Governments, publications of foreign government and international agencies, literary work of scholars, and from books, journal, magazines and newspaper. Major published sources of data were various issues of Economic Survey of India, Economic Survey of Bihar, Census Reports, Reports available with Ministry of Human Resource Development, Health, Finance, Water Supply & Sanitation of Government of India and Government of Bihar, Web Sites of World Bank, Asian Development Bank and Planning Commission. Some Secondary data, in unpublished form, was collected from relevant government offices and related institutions. Data pertaining to various existing PPP models was collected.

Some information has also been collected from Primary Sources. Focus group discussion and key informant interview methods were used to gather relevant information. To understand how different sections of the society whether men or women, rich or poor, serviceman or businessman, government employee or common man and rural people or urban people, thinks and what expects from the government as well as private players, a conduct of Focus Group Discussion is very useful. By using this method, we can distinguish between the diverse requirements of different

stakeholders and then analyze the problems and difficulties faced by them. Focus group discussion helped in generating diverse opinion about the mode and mechanism of service delivery in the state.

Focus group interviews normally help in understanding the broad outline of the problem but for the people who are not as empowered as others. A key informant interview is more useful in understanding problems and difficulties at micro level. This brings out the problems being faced by the weak group of the society. The government officials involved in delivering the services to the society as well as the private players working in this domain were interviewed. In order to remain as open and adaptable as possible to the interviewee's nature and priorities, informal, conversational interview method was adopted.

Apart from that, case studies of various successful as well as failed public private partnership models was undertaken to highlight best practices and draw important lessons. Projects from all over the country having even a little bit of similarities at the ground level were thoroughly studied. The particular emphasis while documenting the case study was to focus on developing and under developed regions to fully understand the problem. The challenges and various issues involved with the mechanism and functioning of the initiatives was also documented. This is crucial in the sense that while preparing a model for such initiatives, same mistake should not be repeated. This exercise was done to specifically highlight the innovations rather than mere research. Innovative initiatives were well discussed so that, it can be replicated in future.

2.2.4 Data Analysis

After the completion of data collection, the data need to be analyzed keeping the objectives of the study in view. Statistical analysis of both primary and

secondary data was carried out. Based on data so collected, few tools of quantitative as well as qualitative analysis were carried out. For quantitative analysis, some tables and relevant matrix is used to classify different data for understanding the local complex situation and the failure on the part of government in delivering the services to the citizens.

2.2.5 Limitations of the Study

The scope of social sector development being enormous, the study confine only to the development of education, health and water supply & sanitation sector in a poverty stricken state like Bihar and the possibility of PPP. Due to less number of PPP in social sector, it was difficult to find detailed information on about the projects. Some more PPP projects operational in similar conditions as prevailing in the state of Bihar could be studied in detail to draw better inferences. It was not possible to meet those people who are involved in PPP projects running in other parts of the country. These people may have provided better insight about the working of a real time project. This thesis could not gather information from the people who were involved with conceptualization of a PPP project which are claimed to be successful in other states of the country. These people include the government officials, private players and the advisers to the government. PPPs are although not very new concept but there is lack of case analysis based study on the topic. Availability of such research materials could have a positive impact on the findings of the study.

CHAPTER 3

DEVELOPMENT OF SOCIAL SECTOR IN BIHAR

This chapter focuses on the status of social service delivery in Bihar. This chapter presents a brief geographical, administrative and socio-economic profile of Bihar and discusses the problems and relative position of Bihar in delivering the social services among the major states. The public service mechanism and its outcome within the state of Bihar are also analyzed in this chapter. The problems in the provision of education, health and water supply & sanitation have been unfolded in this chapter.

3.1 A brief Profile of Bihar

According to 2011 census, Bihar state having population of 8,28,78,796 accounts for 8.07 per cent of the country's population. The population of the state increased at the rate of 28.43 per cent during 1991-2001 as against the increase of 21.34 per cent registered for the country. The density of population of the state at 880 persons per sq. km. is much higher against the national average of 324 persons per sq. km. With a geographic area of 94,163 sq km. it ranks twelve and covers about 2.86 per cent of the total area of the country.

Bihar is located in the eastern part of the country (between 83°-19'-50" to 88°-17'-40" E longitude and 24°-20'-10" to 27°-31'-15" N Latitude). It is an entirely land-locked state, situated mid-way between the humid West Bengal in the east and the sub humid Uttar Pradesh in the west (**Map 3.1**). This geographical position provides Bihar a transitional position in respect of climate, economy and culture. It is bounded by Nepal in the north and by Jharkhand in the south. The Bihar plain is divided into two unequal halves

by the river Ganga which flows through the middle from west to east. One of the most striking feature of the river system of Bihar is the dominant role of Ganga. The important rivers that join the Ganga from the north are, from west to east, Ghaghra, Gandak, Burhi Gandak, Kosi, Mahananda and its tributaries. Kosi river is also known as river of sorrow as it brings flood every year destroying the crops in north Bihar to a large extent. Sonpur, which is situated along Ganga's bank is famous for the great bathing festival which is the occasion for the greatest cattle and elephant fair in the world. The Karmanasa, Sone, Punpun, Phalgu, Sakri and Kiul are the principal streams that join the Ganga from the south. Forty-one per cent of cultivated area is flood prone and another forty per cent is drought prone.

Map 3.1: Political Map of Bihar



Source: www.gov.bih.in accessed on May 3, 2012

Agriculture is the dominant economic activity employing around three quarters of the work force in the State. The major crops of the state are

paddy, wheat, lentils, sugarcane, and jute. Jute is transported to factories located mostly near Kolkata for easy export of the finished material. Supplementary crops include oilseeds, pulses, barely, gram and maize and a variety of vegetables. The principal fruits are mangoes, banana, jack fruit and litchis. The State is also known of its fruit products like litchi and mango. Bihar is one of the very few areas outside China which produces litchi. Silk (particularly from the Bhagalpur region in the East, known as Tussar silk) is demanded all over the world for its unique quality. Forest products like hard wood timber, Saal and Sakhua from the north are extensively sold outside the state. Bihar is also the sixth largest producer of tobacco in the country. Among the wildlife, notable are deer, bears, numerous species of birds, including the peacock, pheasant, and wild fowl, and most notably, the tiger. The forest around Valmiki Nagar, West Champaran is one of the last remaining refuges of this highly endangered species.

North Bihar is a rich agricultural area having many industries associated with agricultural products. There is numerous sugar factories scattered throughout the area. Many rice and edible oil mills also dot the landscape. It also has some sundry, but important, manufacturing plants, for example the Button Factory at Mehsi and the Arthur Butler & Co, at Muzaffarpur. Immediately after independence, a major industrial complex grew around Barauni. The industrial plants located in the complex include a fertilizer factory, oil (petroleum) refinery plant, and the thermal power station. A thermal power plant is also in operation at Kanti, Muzaffarpur along its border with East Champaran. Recently, a thermal power plant has also begun operation at Barh in Patna district.

Hindi is by far the most common language of the state, understood by all. English is the language of commerce and is spoken by the educated masses. In addition people speak many dialects in different regions. The majority of people are Hindu. So, all traditional Hindu festivals are observed in the State. Holi, Saraswati Puja, Durga Puja or Dusserah, Deepavali, Bhaiya Dooj, etc. are the major festivals in Bihar. One festival that is uniquely associated with Bihar is the festival of Chhath. Muslims comprise a vast minority. Christians, although proportional to the whole population a small minority, are very large in absolute numbers. Many beautiful Catholic and Protestant church buildings dot the landscape of towns in Bihar. Special mention may be made of the St. Joseph's Convent, the St. Xavier's School with its chapel, Padri-Ki-Haveli, and the church at the Holy Family Hospital in Patna. Surprisingly, the population of Sikhs is less in the land that gave the tenth guru, Guru Gobind Singh. The Harmandir Takht, the gurudwara that commemorates Guru Gobind Singh, is a sacred place of pilgrimage for the Sikhs, also known as Patna Sahib.

The state as it is today has been shaped from its partition from the province of Bengal in the year 1912. Recently, Bihar was separated from the tribal southern region called Jharkhand on November 15, 2000. The State of Bihar is divided into nine divisions spreading over 38 districts. There are 8,471 panchayats and 45,103 revenue villages. Bihar is predominantly rural in nature with only 14 places identified as urban agglomerations (Table 3.1).

TABLE 3.1
Administrative Units in Bihar

<i>Particulars</i>	<i>Number</i>
Divisions	9
Districts	38
Sub-divisions	101
CD Blocks	534
Panchayats	8,471
Revenue Villages	45,103
Urban	14
Agglomerations	
Towns	199
Police Stations	853
Police Districts	43

Source: www.gov.bih.in accessed on May 3, 2012

3.2 Economy of Bihar

Bihar is stereotypically a poor state with rich natural resources. Bihar, despite being a land of rich history, culture and having experienced a high level of socio-economic development in the past, ranks among the most backward states in India. It is the least urbanised state in the country with urban population of just over ten per cent. It has the lowest literacy rate (47 per cent), the highest proportion of the people living below the poverty line (next only to Odisha) and the lowest per capita income among the major states of India.

Bihar has been among the lowest growing regions of the country for many decades, though there are clear indications in the recent years that this trend may be changing for the better. Bihar stunned the country by achieving a high growth performance, averaging 11.4 percent annual growth over the five year period starting 2004-05. The sectors powering growth in the state are construction at 34.4 per cent growth, communication at 20.4 per

cent during tenth plan period. A look at the graph on annual growth shows fluctuating trend from year to year. The reason behind this volatility is that Bihar's economy has not diversified enough over the last few years. The share of agricultural sector in the economy has been declining over the last decade but still accounts for almost a quarter of Bihar's income. Manufacturing accounts for just 4-5 percent of the state income, with the major share coming from the un-registered sector (Table 3.2). This means that the organized manufacturing still accounts for just under a quarter of manufacturing activity in the state.

TABLE 3.2
Average Annual Growth Rate of GSDP in Bihar
(1999-00 prices, per cent)

Sl. No	Sector	8 th Plan	9 th Plan	10 th Plan	11 th Plan*
1	Agriculture	4.9	0.8	9.0	1.6
2	Forestry & logging	-2.4	5.3	4.2	4.2
3	Fishing	7.8	8.9	1.8	7.0
	Agriculture & Allied	4.5	1.2	8.2	1.9
4	Mining & quarrying	4.3	56.1	-9.2	2.3
	Primary	4.5	1.4	7.9	1.9
5	Manufacturing	-3.5	10.4	4.8	8.3
5.1	Manufacturing-Registered	-10.0	13.1	1.6	5.0
5.2	Manufacturing-Unregistered	0.2	10.5	6.1	8.9
6	Construction	3.1	15.7	34.4	17.9
7	Electricity, gas and Water supply	11.7	2.0	5.1	5.2
	Secondary	-0.8	9.7	18.5	14.4
8	Transport, storage communication	3.9	6.1	5.7	6.9
8.1	Railways	1.6	5.4	-0.3	1.2
8.2	Transport by other means	3.7	4.0	2.6	4.5
8.3	Storage			2.4	1.3
8.4	Communication	16.8	12.6	20.4	13.7

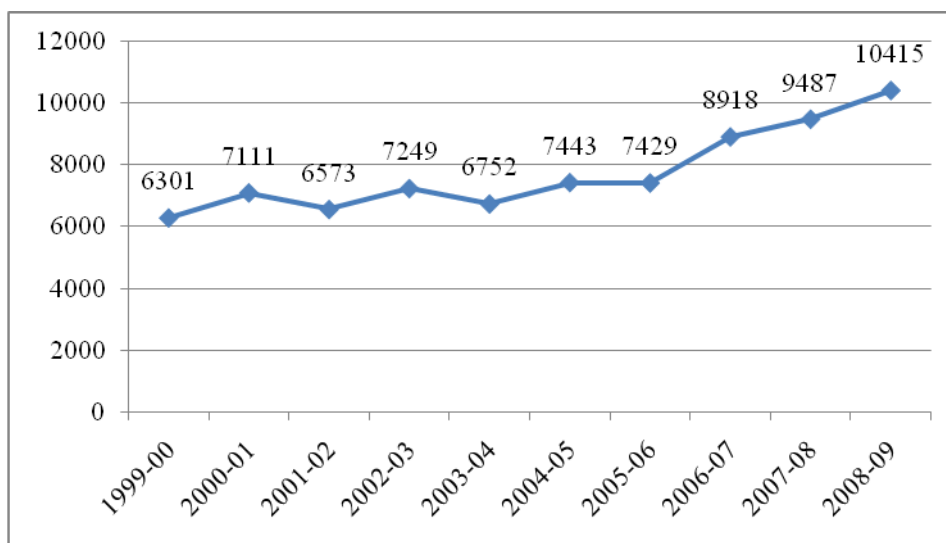
9	Trade, hotels and restaurants	6.9	10.2	13.7	19.0
10	Banking & Insurance	8.6	11.9	5.4	8.2
	Real estate, ownership of dwellings				
11	and business services	3.8	5.8	5.0	6.3
12	Public administration	3.5	8.7	0.9	11.6
13	Other services	8.6	4.7	3.4	9.4
	Tertiary	5.9	6.7	6.9	12.9
14	State Domestic Product	4.4	3.9	8.5	9.7

Source: Ministry of Statistics and Programme Implementation, Government of India

Note: * The growth rate is for two point of time i.e. 2007-08 and 2008-09

The growth in Per Capita Gross State Domestic Product (PCGSDP) mirrors the trend in the growth of GSDP. However, due to the high population growth rate in Bihar the gains due to the improvement in overall growth rate of the economy have not translated into commensurate improvement in incomes at the level of households or individuals. In the last decade, PCGSDP has increased from Rs. 6,301 in 1999-2000 to Rs. 10415 in 2008-09 (Graph 3.1).

Graph 3.1: Per Capita Gross State Domestic Product in Bihar
(1999-2000 Prices)



Source: Ministry of Statistics and Programme Implementation, Government of India

3.3 Status of Social Sector in Bihar

According to provisional figures of 2011 census, the total population of Bihar stands at 103.8 million. With an increase in population of about 20.8 million in the last decade, Bihar is the third most populous state in India, after Uttar Pradesh and Maharashtra and accounts for one-seventh of India's population below the poverty line. Bihar's performance lags seriously behind national trends in almost all indicators. In comparison with rest of the country, Bihar's progress towards achieving development goals has been very slow in relation to most indicators of human development. Bihar ranks lowest amongst major states in almost all indicators. Bihar has highest percentage (53.5 per cent) of poor people among major states in India. In education sector Bihar's performance is dismal and literacy rate stands at 63.8 per cent against the national average of 74 per cent. Other backward states like Odisha, Uttar Pradesh, etc. have performed well in comparison to Bihar in achieving the literacy rate. Primary education is crucial for building a strong human capital and hence achieving a higher economic growth. But Bihar has failed in enrolling its children and Net Enrollment Ratio (NER) for primary school is just 84.3 against hundred per cent enrollment seen in the states of Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra and West Bengal. The national level NER is 98.6 per cent. In health sector, some indicators like infant and child mortality or child malnutrition, Bihar's rate of progress in the last decade was impressive but in the case of critical indicators such as immunization, use of contraceptives and access to sanitation facilities, progress has been very slow. Maternal mortality ratio (MMR) in Bihar was 261 in 2007-09 whereas; it was 134 in Andhra Pradesh, 148 in Gujarat, 81 in Kerala and 172 in Punjab. However, MMR in Bihar is better than some states like Assam

(390), Madhya Pradesh (269), Rajasthan (318). The same mixed relative performance is witnessed in child health. The facility of clean drinking water and sanitation facility in the state are not up to the level as per the standards prescribed by various agencies. In India, only 51.8 per cent of households have access to sanitation facilities. The situation is particularly worse in case of poor states like Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh and Uttarakhand where more than 60 per cent of the people have no toilets. A very high percentage (74.1 per cent) of people in the state does not have sanitation facility within their house. Most of them defecate in open areas undermining the dignity of people, especially women (Table 3.3).

TABLE 3.3
State-wise Major Social Sector Indicators

<i>State</i>	<i>Population below Poverty Lines (%) 2008-09</i>	<i>Literacy Rate, (Census 2011)</i>	<i>Net Enrolment Ratio, (primary) % 2009-2010</i>	<i>Maternal Mortality Ratio, 2007-09</i>	<i>Under-5 Mortality Rate, 2008</i>	<i>HH not using Improved Source of Drinking Water (%), 2008-09</i>	<i>HH without Sanitation Facility (%), 2008-09</i>
Andhra Pradesh	21.1	67.7	100.0	134	58	5.6	47.9
Assam	37.9	73.2	100.0	390	88	16.1	12.1
Bihar	53.5	63.8	84.3	261	75	1.8	74.1
Gujarat	23.0	79.3	100.0	148	60	3.9	43.6
Haryana	20.1	76.6	99.7	153	65	1.6	33.7
Karnataka	23.6	75.6	100.0	178	55	2.5	51.5
Kerala	12.0	93.9	100.0	81	14	25.7	4.3
Madhya Pradesh	36.7	70.6	100.0	269	92	7.6	70.2
Maharashtra	24.5	82.9	100.0	104	41	8.2	36.4
Odisha	37.0	73.5	99.8	258	89	14.9	78.7
Punjab	15.9	76.7	96.2	172	49	0.1	24
Rajasthan	24.8	67.1	97.4	318	80	11.6	63.6
Tamil Nadu	17.1	80.3	98.6	97	36	2.5	46.6
Uttar Pradesh	37.7	69.7	96.2	359	91	2.7	65

West Bengal	36.7	77.1	100.0	145	42	3.5	32.4
All India	29.8	74.0	98.6	212	69	6.8	49.2

- Source:** (i) Census of India 2011, Registrar General, India.
(ii) SRS Bulletin, Vol. 45 No. 1, Registrar General, India.
(iii) www.tsc.gov.in accessed on Apr 1, 2012.
(iv) Planning Commission, Government of India.

Analysis of major social sector indicators reveals the depressing performance of Bihar amongst the major states in India. The poor levels of outcomes can be attributed to poor social services and input indicators. These are also reflection of inefficient public delivery system, which has failed to reach the poorest section of the society. Social sector comprising education, health and water & sanitation are crucial for economic development of a country. It is indeed imperative to carry out a detailed analysis of all three sub-sector of social sector. An in-depth analysis of status, gaps and constraint is carried out in the following section.

3.3.1 Status of Education Sector in Bihar

Adequate and balanced social sector development is vital for just and equitable economic development of the country. Social sector plays a crucial role in shaping economic forces which, in turn, have tremendous impact on economic development of a country (P. T. Bauer, 1957). Education is one of the important components of the social sector which have a dominant role in economic development. Education is one of the most important instruments for social and economic transformation. A well educated population, adequately equipped with knowledge and skill is not only essential to support economic growth, but is also a precondition for growth to be inclusive since it is the educated and skilled person who can stand to benefit most from the employment opportunities which growth will provide (Approach Paper to 12th Five Year Plan, 2011). The crucial role of

education for economic development has resulted in the emergence of the concept of human capital. It has filled up the gap in the neo-classical model of economic growth, highlighting the importance of human capital over and above that of physical capital (Amartya Sen, 1996). Lack of education, particularly elementary education, restricts the ability of the nation to integrate successfully with the modern world market. Some of the south-east Asian countries like Thailand, Korea, etc. experienced robust growth due to heavy investment in education. Elementary education played pivotal role in their advancement and left behind many industrialized developed nations in terms of economic development in recent years. Basic skill provided by elementary education formed the base for those industries in which these countries excelled and integrated with the world economy.

Education is one of the core elements for building up human capital base of a country. Education helps an individual acquire certain endowments, abilities and understanding which in turn drives social and economic development of the nation (Brian Keeley, 2010). Education supplies the economy with human resources having requisite knowledge and skill to meet the demands for economic development. Education has become part of the economic foundation of modern society – a major avenue of social mobility, a central agency of social distribution and social policy as urgent and as important as poverty, sickness and unemployment (Halsey, 1970). Better education increases earning potential of an individual which results into greater efficiency and increased productivity at national level. Education increases the geographical and occupational mobility of a person, thereby, enhancing their productivity and facilitating innovation. Kothari Commission (1966) stated that the provision of free and universal education for every child is a national objective of the highest priority, not only on

grounds of social justice and democracy, but also for raising the competence of the average worker and for increasing national productivity.

State wise analysis of educational statistics provides the glimpse of qualitative and quantitative progress of states. It shows the relative position of Bihar with respect to major states of the country. Bihar has highest level of drop-out rates in India. It shows that majority of students are not completing their study keeping the overall literacy rate of the state at low level. The high drop-out rate affects the overall education outcome of the state. In Bihar, Gross Enrollment Ratio (GER) for class I-VIII is among lowest in the country. GER in Bihar is 93.7, better than only three states of India namely, Andhra Pradesh (90.1), Assam (83.5) and Haryana (85.8). The national average is higher at 102.4 leading by Gujarat, Madhya Pradesh and Tamil Nadu among others. Bihar has worst pupil-teacher ratio at 80 whereas, it stands at 42 for India and as good as 18 in Karnataka, 28 in Assam and 33 in Maharashtra. To track the progress of states towards Universal Elementary Education, National University of Educational Planning & Administration (NEUPA), 2007 has developed Educational Development Index (EDI). The components used to calculate EDI are access, infrastructure, teachers and outcomes which reflects the educational status of the states. EDI rank of Bihar is lowest at 35 among all states and Union Territory (UT) of India. Also, in the sphere of higher education, Bihar's progress is far from satisfactory. The availability of University and colleges is limited and available resources are not sufficient to cater the demands of students. The number of institutions imparting higher education per lakh of population is lower than most of the states (Table 3.4).

TABLE 3.4
State-wise Major Education Statistics

State	Drop Out Rate	Gross Enrolment Ratio	Pupil Teacher Ratio	Educational Development Index**	Lakh of Population per Institution	
	2008-09	2008-09	2008-09	2009-10	2004-05	2004-05
	Class (I-VIII)	Class (I-VIII)	Primary	Composite Primary and Upper Primary	University	College
Andhra Pradesh	41.3	90.1	32	14	31.6	0.59
Assam	61.2	83.5	28	32	46.5	0.88
Bihar	66.0	93.7	80	35	46.2	1.18
Gujarat	39.7	107.6	30	15	26.6	1.05
Haryana	14.4	85.8	52	11	24.9	1.35
Karnataka	25.9	98.8	18	16	20.3	0.59
Kerala	-14.1	97.9	30	3	40.9	1.76
Madhya Pradesh	21.4	131.9	41	30	30.5	0.84
Maharashtra	25.9	98.1	33	13	24.8	0.84
Odisha	54.3	105.1	33	28	25.4	0.54
Punjab	-19.1	101.9	35	7	28.2	1.2
Rajasthan	50.3	104.6	44	22	24	0.98
Tamil Nadu	8.7	114.2	43	5	16.4	1.44
Uttar Pradesh	52.8	95.4	67	23	45.2	1.75
West Bangal	50.5	109.0	34	26	34.7	2.23
All India	42.4	102.4	42	NA	27.4	1.04

** Not Complete list, ranks of only major states is given.

- Source:** (i) NSS Report No. 532, MOSPI, Govt. of India,
(ii) Eleventh Five Year Plan, Planning Commission, Govt. of India
(iii) Annual Report, 2010-11, Ministry of Human Resource Development, Govt. of India
(iv) Statistics of School Education, 2009-2010, Ministry of Human Resource Development, GoI

Intra-State Comparison

Inter-state comparison of education statistics revealed the relative position of Bihar amongst major states in India. Now, intra-state comparison has been carried out to understand the bottlenecks within the state of Bihar. There is mixed pace of improvement in literacy levels across the districts in Bihar. Patna, capital of the state, stood at the top in the state with highest male and

female literacy rate in year 1991. In 2001, it lost its position to district Rohtas, which now has the highest literacy rate among the males. Patna, however, continues to hold the highest rank in female literacy. The lowest female literacy rate is found in the district of Kishanganj, located in the northeast Bihar. Kishanganj along with Araria, Purnea, Katihar, Madhepura, and Saharsa form a cluster of low literacy districts coupled with low growth rate and high male-female gap. These districts need greater attention while devising strategies for growth of literacy. Few districts of west Bihar have performed relatively better during the last decade. They have not only recorded higher literacy rates among the males and females but have also registered higher growth rates in literacy. These districts include Bhojpur, Buxar, Rohtas, and Kaimur in south Bihar plains and Gopalganj, Siwan and Saran in the northwest. These have invariably registered between 12-15 percentage point change in both male and female literacy rates during the last decade. It is however, worth noting that out of 26 districts of India having literacy rates below 40 per cent, as many as 11 are located in Bihar (Table 3.5).

TABLE 3.5
District-wise Education Parameters of Bihar

<i>Sl. No.</i>	<i>District</i>	<i>Litera- cy Rate, 2011</i>	<i>Net Enrolment Ratio, 2007-08</i>		<i>Drop Out Rate, 2007 -08 (I-V)</i>	<i>Pupil Teacher Ratio, 2007-08</i>	
			<i>Prima- -ry</i>	<i>Upper Prima- -ry</i>		<i>Prima- -ry</i>	<i>Prima- -ry and Upper Prima- -ry</i>
1	Araria	55.1	100	28.2	1	57	69

2	Arwal	69.5	-	-	-	-	-
3	Aurangabad	72.8	100	48.4	3	47	61
4	Banka	60.1	100	34.8	-	57	73
					1		
5	Begusarai	66.2	100	37.6		50	58
					1		
6	Bhagalpur	65	100	29.6		50	58
					1		
7	Bhojpur	72.8	100	58		63	63
8	Buxar	71.8	100	66	5	45	62
9	Darbhanga E.	58.3	98.4	34.6	4	43	54
10	Champanan	58.3	100	28.8	5	52	65
					1		
11	Gaya	66.4	100	40.3		54	63
					1		
12	Gopalganj	67	100	39.1		47	59
13	Jamui	62.2	100	33.5	9	55	59
14	Jehanabad	68.3	100	40.2	4	47	47
15	Kaimur	71	100	51.8	9	42	61
16	Katihar	53.6	100	38.1	-	50	60
17	Khagaria	60.9	100	31.8	-	50	56
18	Kishanganj	57	100	33	-	44	53
					1		
19	Lakhisarai	65	100	37.2		35	50
					1		
20	Madhepura	53.8	100	31.4		44	46
21	Madhubani	60.9	100	40.8	1	47	56
					1		
22	Munger	73.3	100	42.3		52	61
23	Muzaffarpur	65.7	100	37.1	9	48	60
					2		
24	Nalanda	66.4	91.2	39.6		52	65
25	Nawada	61.6	99.5	29.6	7	54	66
					1		
26	Patna	72.5	79.9	28.3		47	63

27	Purnia	52.5	100	26.2	1	66	66
28	Rohtas	75.6	100	52	8	45	58
29	Saharsa	54.6	100	33.4	6	44	44
30	Samastipur	63.8	100	42.2	1	58	70
31	Saran	68.6	100	34.2	2	47	53
32	Sheikhpura	66	100	29.7	8	47	63
33	Sheohar	56	100	32.3	-	56	63
34	Sitamarhi	53.5	100	30.9	-	64	71
35	Siwan	71.6	100	43.3	-	43	54
36	Supaul	59.7	100	31.8	-	45	50
37	Vaishali	68.6	100	45.2	-	48	58
38	W. Champaran	58.1	100	29.6	1	52	53

Source: (i) DISE Report

(ii) Economic Survey 2011-2012, Government of Bihar

Analysis carried out in previous section reveals that the Bihar is struggling to maintain and raise the education scenario. Bihar's position is not satisfactory and also there is widespread inequality within the state in education sector.

3.3.2 Status of Health Sector in Bihar

The health of a nation is vital to the nation's economic growth and stability. It plays an important role in the overall economic and social development of a nation. The macroeconomic evidence confirms that countries with the weakest conditions of health and education have a much harder time achieving sustained growth than do countries with better conditions of health and education. Good health plays a substantial role in economic growth (Robert Fogel, 2000). In the words of Nobel Laureate Amartya Sen, health (like education) is among the basic capabilities that gives value to human life. Health does not mean only the absence of illnesses but it is also the

ability of people to develop to their potential during their entire lives. Health is an asset individuals possess, which has intrinsic value as well as instrumental value. Being healthy is a very important source of well-being and can be counted as an important intrinsic value of health. In instrumental terms, health impacts economic growth in a number of ways. For example, it reduces production losses due to worker illness, it increases the productivity of adult as a result of better nutrition, and it lowers absenteeism rates and improves learning among school children. Using life expectancy and mortality rates as health indicators for different age groups, an estimate of the direct relationship between health and growth in Mexico from 1970-1995 indicates that health is responsible for approximately one third of long-term economic growth (Mexican Commission on Macroeconomics and Health, 2004).

There is strong link between poverty and the health status of an individual. A healthy person is capable of uplifting their economic status and in the process can contribute to the development of the society. Long and expensive illness can drive a non poor person into poverty. Ill health imposes a higher level of risk on the poor. When disease, injury, or some other form of ill health strikes down their principal asset i.e. health, they cannot earn the money needed to provide themselves with food or medicines. It affects the overall well being of a poor family. In other words, a health shock is likely to be catastrophic.

Public provisioning of quality health care is essential to maintain the well being of the citizens of a state. The importance of access to affordable and reliable public health services cannot be underestimated. This is especially important in the context of preventing a non poor from entering into poverty and reducing the sufferings of those who are already poor.

Surprisingly, public health care system is in shambles in many states. There are extreme inequalities and disparities both in terms of access to health care as well as the health outcomes. This large disparity across India places the burden on the poor, especially, women and people belonging to SC and ST community. Inequity is clearly reflected in the availability of public health care resources among states. Birth rate in Bihar is among top states of India at 28.5, worse than the all India figure of 22.5 per cent. Bihar is ranked sixth in terms of infant mortality rate which is 52 but not better than national average of 50. Maternal mortality rate (MMR) is high at 261 against the national average of 212. MMR is quite low in the states of Maharashtra, Tamil Nadu, Uttar Pradesh, etc. as compared to Bihar. All indicators in health sector give the present situation of health facility delivery in the state. The relative rank of Bihar among major states reflects the poor condition of state in the health sector (Table 3.6). The status of health services in Bihar is still inadequate; however, little improvements have been recorded in this sector in recent years. This is because of increase in expenditure for health services on one hand and better monitoring of the health services on the other. But, still there is much to be achieved in this crucial sector to come at par with other states of the country.

TABLE 3.6
State-wise Major Health Statistics

<i>States</i>	<i>Birt h r a</i>	<i>Deat h r a te,</i>	<i>Under-5 Mort ality Rate,</i>	<i>Infant mort ality rate,</i>	<i>Materna l Mort ality</i>
Andhra Pradesh	18.3	7.6	58	49	134
Assam	23.6	8.4	88	61	390
Bihar	28.5	7.0	75	52	261*

Gujarat	22.3	6.9	60	48	148
Haryana	22.7	6.6	65	51	153
Karnataka	19.5	7.2	55	41	178
Kerala	14.7	6.8	14	12	81
Madhya Pradesh	27.7	8.5	92	67	269**
Maharashtra	17.6	6.7	41	31	104
Orissa	21.0	8.8	89	65	258
Punjab	17.0	7.0	49	38	172
Rajasthan	27.2	6.6	80	59	318
Tamil Nadu	16.3	7.6	36	28	97
Uttar Pradesh	28.7	8.2	91	63	359***
West Bengal	17.2	6.2	42	33	145
India	22.5	7.3	69	50	212

* includes Jharkhand

** includes Chhattisgarh

*** includes Uttarakhand

Source: (i) SRS Bulletin, Vol. 45 No. 1, Registrar General, India

(ii) Special Bulletin on Maternal Mortality in India 2007-09, SRS, Registrar General, India

Intra-State Comparison

An analysis of health related outcomes within the state of Bihar is necessary to understand the regional disparity in health sector. Sitamarhi has bad situation in almost all the indicators mentioned in the table. This district has high birth rate and highest IMR and U5MR among all districts of the state. Araria, Darbhanga, Khagaria, Madhepura, Purnia, Saharsa and West Champaran have high level of U5MR in the state. Patna by far has better performance than most of the districts of the state with low IMR and U5MR (Table 3.7). The state of Bihar is characterized by low level of health outcomes due to lack of personnel and required infrastructure. The reasons for poor outcomes in Bihar are discussed in detail in later section of the chapter.

TABLE 3.7
District-wise Health Related Indicators of Bihar, 2010

<i>Sl. No.</i>	<i>District</i>	<i>Crude Birth Rate</i>	<i>Crude Death Rate</i>	<i>Infant Mortality Rate</i>	<i>Under 5 Mortality Rate</i>
1	Araria	30.9	7.8	61	87
2	Arwal	NA	NA	NA	NA
3	Aurangabad	25.6	6.4	48	61
4	Banka	25.8	6.1	48	63
5	Begusarai	26.6	6.5	46	65
6	Bhagalpur	26.3	5.5	54	69
7	Bhojpur	24.6	5.8	47	61
8	Buxar	25.1	6.8	55	74
9	Darbhangha	26.5	8.8	51	85
10	E. Champaran	30.4	8.1	57	75
11	Gaya	24.9	7.4	55	70
12	Gopalganj	25.7	6.5	51	66
13	Jamui	26.4	6.7	57	78
14	Jehanabad	24.9	6.2	53	67
15	Kaimur	25	6	56	73
16	Katihar	28.8	6.5	59	85
17	Khagaria	30.7	9.4	66	103
18	Kishanganj	30.5	6.5	61	90
19	Lakhisarai	24	6.5	53	70
20	Madhepura	30.1	7.5	71	101
21	Madhubani	24.7	7.4	54	73
22	Munger	25	6.7	51	63
23	Muzaffarpur	25.5	8.6	60	89
24	Nalanda	26.3	8	52	80
25	Nawada	25	5.9	49	61
26	Patna	21.8	5.2	39	53
27	Purnia	27.6	7.2	62	102
28	Rohtas	25.9	7	51	65
29	Saharsa	32.1	7.8	62	91

30	Samastipur	28.7	6.9	54	77
31	Saran	24.5	7.7	52	70
32	Sheikhpura	28.9	8.1	58	76
33	Sheohar	31.2	7.6	50	87
34	Sitamarhi	28	9.6	67	106
35	Siwan	26.1	7.5	49	73
36	Supaul	28.5	6.5	64	89
37	Vaishali	27.3	7.6	50	70
38	W. Champaran	28.6	8.9	57	81
39	Bihar	26.7	7.2	55	77

Source: Economic Survey 2011-12 , Government of Bihar

In the light of preceding analysis, Bihar's public health situation is rather depressing. There is wide variation within state. Mortality rates in Bihar are significantly higher than those in India with wide gaps between rural and urban areas.

3.3.3 Status of Water Supply & Sanitation Sector in Bihar

Water is essential for life, growth and well being. Water can also be a source of various water borne disease and cause of ill-health. Contaminated or improperly handled and stored water can lead to illness. Sanitation is a basic need as important as safe drinking water or food. A sanitary toilet within or near home can help prevent many diseases. Provision of clean drinking water and sanitation facility are vital to improve the health of the people and to reduce the incidence of diseases and deaths. Safe drinking water and improved sanitation have a significant bearing on the infant mortality rate, death rate, longevity and productivity. These facilities ensures over all well-being of a person.

Poor people in both, rural and urban areas face great difficulty in getting clean water and hygienic sanitary facilities. They bear the disproportionate burden of contaminated and non-availability of water.

They often have to supplement public sources of water and sanitation with other sources only at a higher price. This affects the economic condition of poor. Mostly, women bear the physical burden of fetching water. Non-availability of sanitary facilities within home or near home has adverse effect on the dignity of women. Women and children are particularly vulnerable to the effects of water contamination and poor sanitary facilities. Sanitary coverage which should be the way of life to safeguard health is inadequate in India. Open defecation continue to remain the only form of sanitation for the majority of people in rural areas. The practice of open defecation is prevalent in rural areas mainly due to non-availability of services, traditional behavior pattern and lack of awareness. In urban areas, there is acute shortage of sanitation facility and resources to cover the growing population. Lack of awareness about the importance of sanitation is also a big problem prevalent across the country.

Access to reliable, sustainable and affordable water supply and sanitation facility in most states are lagging behind. Sustainable supply of drinking water faces two major problems - scarcity and contamination in water. These problems are particularly visible in low rainfall and high potential evaporation areas. Piped drinking water is usually distributed for no more than a few hours a day, irrespective of the quantity available. In Bihar, only 42.41 per cent villages have the facility of piped drinking water against India average of 96.26 per cent. Bihar ranks lowest amongst all major states in providing piped drinking water facility. In rural areas, handpumps for providing water may remain out of order for many months. Many rural habitations face water shortage on account of poor availability of water sources and facilities working below capacity due to poor operation and maintenance. In Bihar, only 79.34 per cent of the handpumps are in

working condition whereas Rajasthan being a water deficient state claims to maintain hundred per cent of its handpumps in working condition. The national average of working handpump is way above at 88.21 per cent. Quality of water supplied does not meet the standards set by government agencies. Supplied water is often contaminated leading to various diseases like diarrhea, typhoid, etc. Affected quality of water in rural areas of Bihar is as high as 15.84 per cent. Rajasthan and Assam are only two states where quality of water is worst than Bihar. All India average of affected water quality in rural areas is 6.77 per cent. Safe disposal of waste water and human excreta from the immediate environment is necessary to maintain well being. Bathroom facility within household is first step in this direction. But, availability of bathroom facility within house is very low in Bihar as compared to other states. In urban areas, sewage overflows into open drain because of blocked sewage and non-functioning of pumping stations. Seventy eight per cent of households in Bihar have no bathroom facility within house against the national average of 51.7 per cent (Table 3.8). All these facts put Bihar at low rank in terms of providing water and sanitation facility amongst major states of the country.

TABLE 3.8
State-wise Major Water and Sanitation Statistics

<i>States</i>	<i>Piped Water Supply in Villages, 2006</i>	<i>Working Hand pumps, 2006</i>	<i>Affected Water Quality in Rural Areas, 2011</i>	<i>No. Bathroom Facility within House, 2011</i>
Andhra Pradesh	100.00	99.97	0.78	44.5
Assam	81.45	80.00	20.16	30.4
Bihar	42.41	79.34	15.84	78.0
Gujarat	100.00	96.34	0.67	43.1

Haryana	99.12	100.00	0.31	27.3
Karnataka	100.00	77.32	12.05	34.1
Kerala	100.00	-	7.83	15.4
Madhya Pradesh	89.71	90.59	2.09	58.8
Maharashtra	91.89	90.48	2.11	44.6
Orissa	100.00	96.01	9.85	84.4
Punjab	100.00	98.34	0.33	27.6
Rajasthan	100.00	100.00	24.62	56.1
Tamil Nadu	100.00	80.82	0.53	41.1
Uttar Pradesh	-	94.74	0.33	68.0
West Bengal	100.00	85.74	5.28	56.9
India	96.26	88.21	6.77	51.7

Source: (i) Eleventh Plan Approach Paper, Planning Commission,
(ii) NSS 65th Round, MOSPI, Government of India

Intra-state Comparison

Better water supply and sanitation services have important externalities in terms of improved public health. A district wise data reveals the wide spread disparity in providing the water and sanitation facility in the state. Few districts like Buxar, Madhepura, Patna and Saran have managed to cover as much as habitations as possible in providing water supply and sanitation facility, whereas few districts like Aurangabad, Gopalganj, Purnia and Supaul has not even covered more than ten habitations during 2010-11. Similarly, construction of handpumps in a district is as high as 4,890 in Gaya and as low as 342 in Sheohar (Table 3.9). Again, construction of individual household latrine provides an example of inequality within the state. The pattern of coverage in the state for water supply and sanitation facility lacks vision and has no targeted intervention. A state cannot develop with glaring variations in achieving the targets within social sector. All districts should have focused implementation of the projects related to water supply and sanitation.

TABLE 3.9
District-wise Data on Water Supply and Sanitation, 2010-11

<i>District</i>	<i>No. of Habitat ions covered under water supply and sanitati on</i>	<i>No. of Handp umps constru cted</i>	<i>No. of IHHLs constructed</i>	
			<i>APL</i>	<i>BPL</i>
Araria	36	623	224	11,785
Arwal	NA	NA	430	7,842
Aurangabad	5	1,556	1,914	14,640
Banka	74	2,316	1,395	2,470
Begusarai	43	1,767	2,294	23,803
Bhagalpur	208	1,912	241	18,294
Bhojpur	189	1,334	12,315	15,014
Buxar	428	1,886	26,353	0
Darbhang East	93	1,105	5,863	34,773
Champan	112	2,348	4,158	21,653
Gaya	221	4,890	6,097	16,042
Gopalganj	0	721	1,749	2,432
Jamui	130	1,320	1,249	6,584
Jehanabad	93	712	3,777	7,772
Kaimur	70	1,116	1,381	3,441
Katihar	98	889	1,063	7,338
Khagaria	73	462	1,295	9,029
Kishanganj	276	933	0	15,290
Lakhisarai	56	428	4,138	7,614
Madhepura	54	1,251	6,873	26,462
Madhubani	436	4,576	14,534	13,216
Munger	26	609	743	3,535

Muzaffarpur	99	2,766	4,000	23,960
Nalanda	171	2,813	2,272	16,439
Nawada	68	1,417	2,227	12,971
Patna	379	2,557	1,794	53,027
Purnia	10	1,146	4,578	30,727
Rohtas	61	1,145	15,350	24,335
Saharsa	93	935	6,474	28,740
Samastipur	242	1,878	0	10,490
Saran	434	3,528	12,348	19,224
Sheikhpura	29	439	3,141	5,369
Sheohar	34	342	1,601	5,524
Sitamarhi	156	1,303	1,888	8,124
Siwan	58	1,442	2,034	4,255
Supaul	0	886	1,141	11,424
Vaishali	60	1,828	12,766	16,439
West Champan	207	1,418	3,519	17,235
			1,73,21	5,57,31
Bihar	4,822	58,597	9	2

Source: Public Health Engineering Department, Government of Bihar.

3.4 Social Sector in Bihar: Expenditure

Investment in social sector is vital to achieve overall development of the economy. Investment in social sector is investment in nation building. Number of schools, colleges, hospitals, etc. affects the quality of human capital. Investment in infrastructures and delivery of services is necessary to reap the benefit of human capital for the betterment of the society as a whole. The quality and quantity of investment in social sector and its sub-sector affects the social sector outcome of a country. A pattern of expenditure incurred by various state governments reveals the importance accorded to a particular sector.

State-wise analysis of expenditure pattern in social sector reveals an interesting trend. In the preceding sections, it was established that the status of social sector in Bihar is relatively poor. But, it is surprising to find that the state government is not behind most of the states as far as expenditure pattern are concerned. Then state of Bihar is spending 41.5 per cent of its total expenditure on social sector, whereas it is lower in the states of Andhra Pradesh (40.8 per cent), Kerala (35.1) and Punjab (27.3). Social sector expenditure as ratio to total expenditure in Bihar is higher than the national average of 40 per cent. Again, same pattern is observed in the expenditure on the education. Bihar is spending as high as 17 per cent of aggregate expenditure on education, whereas it stands at 13.5 per cent in Andhra Pradesh, 16.4 per cent in Gujarat, 15.7 per cent in Karnataka, 13.1 per cent in Punjab and 15.1 per cent in Tamil Nadu. Average spending on education at national level at 16.5 per cent is less than the spending in Bihar. An analysis of expenditure pattern reveals that the expenses incurred by the Bihar government are not translated into the results. There are unproductive expenses in the state and lack quality. The investments incurred in social sector as a whole and in education sector in particular requires immediate attention to reap the benefits of investment. However, with respect to health sector, government expenses are not substantial in comparison to other states. The state of Bihar is spending 3.7 per cent of its total aggregate expenditure on health, which is lower than the national average of 4.3 per cent. Health expenditure in Kerala is highest in the country at 5.1 per cent followed by Assam (4.9 per cent) and Uttar Pradesh (4.9 per cent). Haryana has the lowest expenditure (3.6 per cent) on health related services (Table 3.10).

TABLE 3.10
State Wise Expenditure Pattern, 2010-11*
(Revenue Expenditure and Capital Outlay)

<i>States</i>	<i>Social Sector as Ratio to Total Expenditure</i>	<i>Education** as Ratio to Aggregate Expenditure</i>	<i>Medical and Public Health and Family Welfare as Ratio to Aggregate Expenditure</i>
Andhra Pradesh	40.8	13.5	4.0
Assam	37.4	18.7	4.9
Bihar	41.5	17.0	3.7
Gujarat	40.0	16.4	4.3
Haryana	40.9	17.6	3.6
Karnataka	40.0	15.7	3.9
Kerala	35.1	16.6	5.1
Madhya Pradesh	39.6	13.9	3.7
Maharashtra	42.7	20.5	3.6
Odisha	42.6	19.8	4.0
Punjab	27.3	13.1	3.5
Rajasthan	43.0	18.4	4.7
Tamil Nadu	40.6	15.1	4.8
Uttar Pradesh	38.2	15.5	4.9
West Bengal	41.9	17.9	4.6
All States	40.0	16.5	4.3

Source: Budget Documents of the State Government available on www.rbi.gov accessed

on Apr 1, 2012.

Note: * Revised Estimates.

** Includes expenditure on Sports, Art and Culture.

Intra-state Comparison

An analysis of expenditure pattern within the state highlights the glaring disparities existing among the districts in respect of various social sector indicators. Analysis in respect of education including a detailed analysis of

primary, secondary and higher education; medical; drinking water supply; sewerage and sanitation is carried out to understand the relative expenditure pattern in the state. It is found that the extent of disparity between Patna and the remaining districts is very large in all the areas. The data on expenditure under different heads show that the extent of disparity and is worrying. The allocation of resources under all these expenditure heads seems to be highly skewed in favour of the Patna district. The expenditure on education in Patna is more than ten times that of most of other districts. Per capita expenditure on higher education in Patna is Rs. 1861.28, whereas it is zero in as many as five districts namely, Arwal, Kaimur, Lakhisarai, Sheikhpura and Sheohar (Table 3.11). Similar trend is witnessed in all the sub-sector in Bihar. It is high time the government should pay immediate attention to rectify this disturbing trend and work towards equitable distribution of state resources.

TABLE 3.11
District-wise Per Capita Expenditure in Social Sector, 2009-10 (Rs.)

<i>District</i>	<i>Primary Education</i>	<i>Seconda- ry Educat- ion</i>	<i>Higher Educat- ion</i>	<i>Medic- al & Public Health</i>	<i>Drinki- ng Water</i>	<i>Sewera- ge & Sanitati- on</i>
Araria	283.7	66.1	0.59	12	1	7
Arwal	288.3	187.9	0.00	4	0	3
Aurangaba d	375.6	124.8	1.16	18	3	7
Banka	286.6	100.2	0.50	16	3	5
Begusarai	415.9	108.4	0.64	22	3	9
Bhagalpur	355.0	170.0	4.53	48	34	7
Bhojpur	398.6	172.9	3.14	25	4	8
Buxar	351.6	197.5	0.87	10	3	5

Darbhanga	306.1	80.1	2.86	76	16	12
E.	392.6	98.0	0.92	26	4	11
Champan						
Gaya	269.8	121.0	1.91	57	16	15
Gopalgunj	428.3	130.7	0.90	16	2	9
Jamui	225.0	82.3	0.71	10	2	6
Jehanabad	330.8	186.2	2.15	14	3	4
Kaimur	263.2	143.3	0.00	9	2	4
Katihar	316.1	72.9	1.90	21	2	4
Khagaria	369.0	101.9	1.18	10	1	5
Kishanganj	264.0	57.5	1.36	9	0	4
Lakhisarai	363.3	144.1	0.00	8	1	3
Madhepura	376.1	84.9	1.60	10	1	6
Madhubani	345.7	99.5	0.61	25	4	18
Munger	455.8	241.2	9.85	17	7	6
Muzaffarpur	367.5	111.4	3.92	61	13	15
Nalanda	419.0	160.1	2.17	25	9	12
Nawada	316.7	119.8	0.76	14	3	7
Patna	3,381.1	542.7	1,861.28	388	204	565
Purnea	304.2	70.8	1.72	21	6	9
Rohtas	345.2	154.3	2.19	21	11	8
Saharsa	355.9	96.3	7.95	14	4	5
Samastipur	201.9	70.0	1.36	21	3	11
Saran	325.5	146.7	3.07	20	9	12
Sheikhpura	351.5	148.6	0.00	7	2	3
Sheohar	294.3	56.0	0.00	4	0	2
Sitamarhi	425.9	120.1	0.62	28	4	13
Siwan	359.3	118.9	0.81	19	2	10
Supaul	282.4	94.0	0.96	10	0	5
Vaishali	373.9	114.2	1.16	23	4	11
W.	251.8	52.9	0.55	26	3	9
Champan						
State	508.3	137.5	107.5	1,16	389	853
Average			2	5		

Source: Accountant General (A & E), Patna, Bihar

The analysis of expenditure pattern gives insight into the skewed pattern of development in the state. There is high regional disparity in the state as far as expenditure pattern is concerned. Although, we observed that the Bihar government is spending sufficient amount under the head of social sector, but it has not managed to achieve the required target. Now, we focus on the gaps existing in the state in social sectors with respect to infrastructure and delivery of social services.

3.5 Development of Social Sector in Bihar: Gaps

The quantity of expenses incurred by the Bihar government is satisfactory as far as other states' expenditure pattern is concerned. But, the amount spent in social sector is not able to give the desired result. There is qualitative problem with the existing expenditure pattern in the state. In spite of allocating a high amount to social sector, gaps with respect to infrastructure and delivery of services exists in the state. Bihar is not able to achieve the target as envisaged in the Eleventh Plan. Planning Commission set eight targets for the state government to achieve during the Eleventh Plan under various heads within social sector. But, state government failed to achieve any of these targets. There is very slow progress in achieving the targets as seen in terms of IMR, MMR, total fertility rate, malnutrition, literacy rate, etc. However, there is little improvement in achieving the desired sex-ratio within the state. But, state government has lot to do in most of the front under social sector (Table 3.12). This slow progress in achieving the target can be attributed to number of reasons like lack of infrastructure, lack of manpower and delivery of social services mechanism. An analysis of each sector within social sector provides answer to this trend. There is high level

of gaps which exists in the state. The gaps existing in the state within social sector is discussed in next section.

TABLE 3.12
Monitorable Targets of 11th Five Year Plan

<i>Sl. No.</i>	<i>Programme</i>	<i>Present Status</i>	<i>11th Plan Target</i>
1	Reduction in IMR	56	29
2	Reduction in MMR	312	123
3	Reduction of Total Fertility Rate	3.9	3.0
4	Reduction in malnutrition (children of age group 0-3)	54.4	27.2
5	Raising the sex ratio for the age group of (0-6)	942	950
6	Reduction in drop-out rate in elementary schools	NA	27.85
7	Increasing literacy rate	47.53	64.4
8	Lowering gender gap in literacy	26.6	17.40

Source: Mid-Term Appraisal of 11th Five Year Plan of Bihar, Planning Commission, Govt. of India

Gap in Education System in Bihar

The dismal state of education outcomes in Bihar can be attributed to the glaring gaps in education system of Bihar. In terms of quantity of education facilities, Bihar seriously lack in number of teachers, trained or untrained, number of schools and classrooms across the state. Almost half of the teachers post is lying vacant for the last several years. There is lack of classrooms to impart education at schools level. Also, within school premises there is lack of toilet facilities for the students, especially, girls. Total number of separate girls' toilets is only 31,664 against required number of 70,265 which means gap of 38,601 numbers of toilets (Table 3.13).

TABLE 3.13
Gaps in Education Facility in Bihar, 2009-10

<i>S. No.</i>	<i>Major Parameters</i>	<i>Required</i>	<i>In Position</i>	<i>Shortfall</i>	<i>Percent Gap</i>
1	Teachers	6,49,214	3,34,308	3,14,906	48.5
2	Schools	75,731	71,031	4,700	6.2
3	New School Buildings	19,663	15,000	4,663	23.7
4	Classrooms (including under construction)	5,89,483	3,28,331	2,61,152	44.3
5	Trained Teachers	5,29,765	3,14,506	2,15,259	40.6
6	Common Toilets	70,265	43,110	27,155	38.6
7	Separate Girls Toilets	70,265	31,664	38,601	54.9

Source: Planning Commission

Apart from the gaps, there is high rate of absenteeism in the state. A high number of teachers are absent from their duty and fail to report to their duty affecting the routine work conditions in a school. A combination of factors, like lack of monitoring of teachers performance and involvement of teachers in a number of miscellaneous government duties accounts for their poor attendance. This absenteeism problem is aggravated further by the rising number of shortage of teachers (UNICEF, 2003). Actual recruitments of teachers are pending for long time.

Gap in Health System in Bihar

There are substantial gaps in health sector in terms of infrastructure and essential health care services. There is gap in terms of manpower, equipment, drugs and consumables in primary health care institutions. There is a drastic decline in the share of public health facilities in both rural

and urban areas. The state of Bihar is facing an acute shortage of doctors. As per National Rural Health Mission (NRHM), there is a requirement of 15,000 doctors but only 4,500 doctors are currently in position. The doctor-population ratio in Bihar is 1:3500, which is far behind the national average of 1:1700. In terms of infrastructure, there is forty per cent gap of sub-centres in the state. Against the requirement of 2,489 primary health centres, there are only 1,641 in position, almost 35 per cent gap. There is huge gap in numbers of community health centres (88.7 per cent). Apart from infrastructural deficit, there is shortage of health personnel across all categories in the health system in Bihar. The assistants (multipurpose worker, health assistant, etc.) to run a health set up are few in number and fail to provide services to patients effectively. As far as specialist doctors are concerned, the situation is even more glaring. There are around 1,800 specialist doctors in the state, including postgraduate degree and diploma holders, against a requirement of 5,000 specialists. Against the requirement of 70 physicians, only 38 are employed. There is lack of skilled supporting staff like radiologists, pharmacists and laboratory technicians. There is shortage of 55 radiographers, 1272 pharmacists and 1576 laboratory technicians in the state. There is requirement of 2,131 nurse/ midwife in the state but presently only 1,425 are working in the public health system (Table 3.14).

TABLE 3.14
Gaps in Health Facility in Bihar, 2008

<i>Item</i>	<i>Required</i>	<i>In position</i>	<i>Shortfall</i>	<i>Per Cent Gap</i>
Sub-centre (SC)	14,959	8,858	6,101	40.8
Primary Health Centre	2,489	1,641	848	34.2

Community Health Centre	622	70	552	88.7
Multipurpose worker (Female)/ANM	10,499	9,127	1,372	13.1
Multipurpose Worker (Male)	8,858	1,074	7,784	87.9
Health Assistant (Female)/LHV at PHCs	1,641	479	1,162	70.8
Health Assistant (Male) at PHCs	1,641	634	1,007	61.4
Doctor at PHCs	1,641	1,565	76	4.6
Obstetricians & Gynecologists at CHCs	70	21	49	70.0
Physicians at CHCs	70	38	32	45.7
Pediatricians at CHCs	70	17	53	75.7
Total specialists at CHCs	280	104	176	62.9
Radiographers	70	15	55	78.6
Pharmacist	1,711	439	1,272	74.3
Laboratory Technicians	1,711	135	1,576	92.1
Nurse/Midwife	2,131	1,425	706	33.1

Source: RHS Bulletin, March 2008, Ministry of Health & Family Welfare, GoI.

Apart from lack of personnel for providing the health related services in the state, there is acute problem of absenteeism by the existing staff. Statistics on absenteeism in public facilities in major states provide a glimpse into the delivery of health care services in Bihar. There is severe absence rate of health personnel in the state. Bihar is ranked lowest in terms of absence rate among all major states in India (UNICEF, 2003). Due to shortage of infrastructure as well as service in public health facility, there is increasing importance of private players in the country. Use of public health care facilities for treatment of ailment was lowest in rural areas of Bihar (five per cent) preceded by Uttar Pradesh, Jharkhand, Maharashtra, Punjab and West Bengal, it was highest in Himachal Pradesh (68 per cent), followed by Jammu & Kashmir, Orissa and Rajasthan. Also, the percentage of ailments treated by government

sources was reported to be as low as 11 per cent in the urban areas of Bihar preceded by Uttar Pradesh (13 per cent), Karnataka (16 per cent), Gujarat, Punjab (18 per cent each) and West Bengal (20 per cent). NSSO reports that the proportion (per 1000) of hospitalized treatments received from public sector hospitals varied from 143 (Bihar) to 913 (Jammu & Kashmir) in the rural areas. Due to the prevailing situation in the government sector, there has been an unprecedented growth of the private sector which does not provide quality health care at reasonable cost. Bihar, Haryana and Maharashtra showed a high degree of reliance on private sector hospitals. Loss of household income was the highest in Bihar (Rs. 585) followed by Himachal Pradesh (Rs. 200) and Andhra Pradesh (Rs. 175) in the treatment of rural population during the last 15 days by source of treatment. This was much higher than the all-India estimate of Rs. 135 as the loss of household income. It was Odisha which had the highest loss of household income (Rs. 887) in treatment of urban population, followed by Jharkhand (Rs. 220), Bihar (Rs. 150) and Andhra Pradesh (Rs. 124), the loss at all-India is Rs. 96.

Gap in Water Supply and Sanitation Facility in Bihar

Water and sanitation related infrastructural facility is poor in Bihar. There is acute gap in public provision of infrastructure to meet the needs of people of Bihar. The coverage in terms of water facility is much below the targeted level. The number of Individual Household Latrine (IHHL) facility is low for population living below poverty line as well as above poverty line. There is only 30.71 per cent Individual Household Latrines, 28.51 per cent Balwadi toilet and 29.76 per cent Sanitary Complex against the norm in the state. The norms set under the total sanitation campaign (TSC) have not

been achieved despite serious government funding and efforts over the years. In total, 11,386 habitations are supplied with contaminated water, major contamination is due to fluoride, arsenic, salty water, etc. The facility of standalone water purification system is provided in 3,331 rural schools against the demand of 54,077. There is gap of about 70 per cent in providing quality water in rural schools. The provision of separate toilet facility for boys and girls in rural schools is low as per the requirement. There is gap of 5,355 toilets in schools. In comparison to other states of India, Bihar has better result in terms of providing drinking water to its population. The standard norm for per capita availability of water per day is 40 liters per capita per day (lpcd). The population having equal to or more than 40 lpcd is 8,28,02,367 with a gap of 76,12,971. The per capita availability of water is relatively better in Bihar. Water coverage in Scheduled Castes and Scheduled Tribe dominated habitats is good in the state (Table 3.15).

TABLE 3.15
Gaps in Water and Sanitation Facility in Bihar

<i>S. No.</i>	<i>Major Parameters</i>	<i>Required</i>	<i>In Position</i>	<i>Shortfall</i>	<i>Percent Gap</i>
1	IHHL – BPL	61,95,779	26,04,856	35,90,923	58.0
2	IHHL – APL	49,75,535	8,25,714	41,49,821	83.4
3	School Toilets	76,581	71,226	5,355	7.0
4	Anganwadi Toilets	6,595	1,880	4,715	71.5
5	Contamination Free Water (Habitations)	16,600	5,214	11,386	68.6
6	Rural Schools having Standalone Water Purification System	57,408	3,331	54,077	94.2
7	Population having equal to or more than 40 lpcd	9,04,15,338	8,28,02,367	76,12,971	8.4
8	Water Coverage in SC	23,520	20,945	2,575	10.9

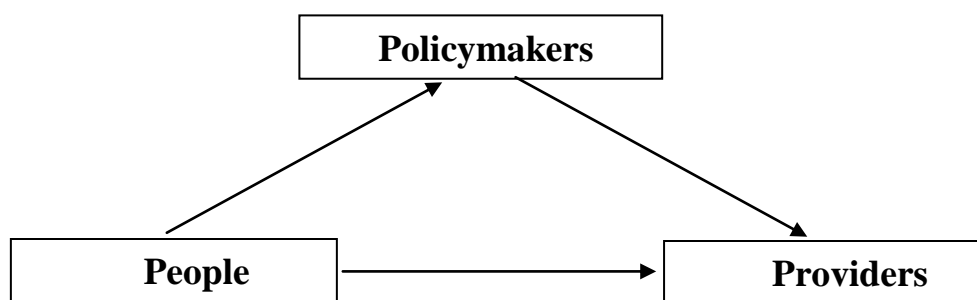
9	Dominated Habitats Water Coverage in ST Dominated Habitats	1,952	1,784	168	8.6
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Source: (i) www.tsc.gov.in accessed on Jan 20, 2012
(ii) www.indiawater.gov.in accessed on Jan 20, 2012

The gaps in Bihar seen in the lack of education, health, sanitation and other important indicators are acute and have persisted over a long period. Lack of education, poor health and inadequate access to safe drinking water and sanitation are closely associated and perpetuated by high levels of poverty. The main reason for poor social sector outcomes is deficiency in the delivery of services that affect the citizens, especially poor, at large. Provision of public services and infrastructure has traditionally been the exclusive domain of the government. But, government has failed to meet the expectations due to number of reasons. Even after allocating adequate share of its budget to social sector, the expenditure does not produce the desired level of services. The people, particularly poor are either underutilizing or are not able to access the services supported by the public spending. The money spent on providing the services are not reaching the neediest people on account of leakages in the intermediate stage arising out of inefficiency or corruption. Service delivery personnel are not well trained and also absent from their duty. These personnel are mired in the system where the incentive for effective service delivery is weak. To understand the bottlenecks in service delivery arrangements, it is useful, following World Development Report (2003), to unbundle the service delivery chain into three sets of actors and examine the relationships between them (Figure 3.1). Users of services or clients have a relationship with front-line providers like teachers and health workers. Unlike a market

transaction, there is no direct accountability of the provider to the consumer for public services such as education, health and water & sanitation. Instead, services are mostly provided through the long route of accountability, by clients influencing policy makers, and policy makers influencing the providers. When the relationships along this long route break down, service delivery failures occur (Bihar Towards a Development Strategy, World Bank Report).

Figure 3.1: Three Actors in Service Delivery



3.6 Social Sector in Bihar: Constraints

In the previous sections, the status, expenditure pattern and the gaps existing in the social sector was discussed. Lack of coordinated action and flaws in expenditure pattern are the major reason behind the poor social sector situation in the state of Bihar. Apart from these evident reasons there are many constraints which hamper the growth of social sector in Bihar. The reasons which affect the progress of social sector is discussed in the following section.

In education sector, Bihar is facing multi-dimensional problems. There are various constraints which hampers the growth of education sector in the state. Most commonly cited problem for the government is the unavailability of land for constructing new primary schools. The government has no stock of land at designated places to construct a school to

meet the requirements of the people. There is shortage of fund to buy land at market price for schools and other educational infrastructures. There is high ratio of out-of school children in the state. The government faces the challenge of bringing these children back to the school. This figure is substantial when compared to other states. Apart from all the problems being faced at student front, there is huge shortage of trained teachers in the state. There is no optimum facility to provide appropriate training to the teachers of the state. The National Education Policies envisage that the states spend at least six per cent of the state domestic product (SDP) on education sector. Bihar is spending almost six per cent of its SDP on education but the size and growth of SDP is almost stagnant over the years. As a result, educational expenditure per child is not increasing at the desired rate. There are various aspects that decide the expenditure levels of education. It is more related to the implementation part of a scheme and governance. There is heavy burden of teachers' salary on the state budget. This is a non-plan expenditure which takes away high proportion of fund, leaving meager fund to be used for developmental purposes.

In health sector, there is growing reliance on the private facilities due to non-availability of public facility. The state government policy do not restrict the private practice of government doctors, which, in turn, promoting private practice at the cost of poor and needy patients coming to government hospital. The nexus between doctors, laboratories and pharmaceutical companies are hindering the growth of government facilities. The out of pocket expenditure on private facilities is very high in Bihar as compared to other states. Shortage of funds and non-availability of land is restricting the government to establish new medical colleges and hospitals. Large number of vacant posts in government facilities is matter of great concern. Low

level of literacy and lack of awareness, especially among women are key reasons for the poor health outcome in the state. Early marriage of girls is still a major issue leading to deteriorating results in the form of low IMR and MMR. Low rate of vaccination and malnutrition among children are major challenges before the government.

In water supply and sanitation sector, Bihar faces constraints with respect to low and inconsistent availability of water, high cost of service, ambiguity in responsibility, lack of awareness and lack of community support, etc. Rainfall is one of the major source for drinking water in the state but rainfall in large parts of the State is inconsistent. The pattern of rainfall varies from year to year and place to place. Bihar receives rainfall only during two months of monsoon which is not sufficient to meet the demands of the people for the whole year. Limited water availability is further aggravated by low operational efficiency. There is lack of administrative and technology to deal with this problem. As a result there is growing dependence on ground water. But, due to recurring flood in the state, ground water gets deteriorated and becomes unfit for consumption. In some parts of the state, there is high fluoride, arsenic and other chemical contamination in water and are one of the biggest challenges and a cause of worry. There is no clear government set up to deal with operation and maintenance of water resources for sustainable results. There is lack of ownership among various stakeholders in the state. Low level of awareness amongst communities about the importance of hygiene practices has a significant bearing on the sanitation facility. Very small segment of the population have toilet facility in their homes. Still, large proportion of population does not use toilets and defecating in open area. Hygiene practices are not at adequate level. Apart from this, there is lack of

community participation with respect to sanitation facilities. There is lack of community effort to improve the situation at ground level and make use of government policies.

3.7 Concluding Remarks

The service delivery in social sector in Bihar is inadequate to meet the demands of people of the state. The above analysis of service delivery in three sectors namely, education, health and water & sanitation reveals that there is limited success on part of state government in providing basic needs to its people.

The composition of diseases in the state indicates that most of them are caused because of poor access to sanitation, safe drinking water and awareness of personal hygiene. These could be avoided by augmenting access to household amenities in terms of drinking water, toilet facilities and well-ventilated houses. There is infrastructural and qualitative gap in the public provision of services in social sector. Government has failed to meet the expectations due to number of reasons. The expense incurred by the government has not produced the desired level of services. A substantial proportion of public health expenditure gets consumed by salary of its staff. The poor are not able to access the services and not reaching the neediest people on account of leakages in the intermediate stage arising out of inefficiency or corruption. The constraints affecting the efficient delivery of services should be addressed at the earliest possible manner. Economic development being a multi-sectoral process; the strategy for economic development must build on a broad range of social investments as well as strategies to encourage private-sector business investment.

CHAPTER 4

CONCEPTUALIZATION AND EVALUATION OF PPP AND ITS SIGNIFICANCE

This chapter gives the background on concept of public private partnership. Different agencies/ entities and government define PPP in their own context and needs. The various definitions of PPP defined by various organizations are presented in this section. In the next section, common elements that define PPP are discussed. Also, typical characteristics of a PPP and the sharing of responsibilities and risks associated with a typical PPP are discussed in subsequent sections. PPP is subject to criticism from various agencies and academicians due to misconceptions related to PPP. These misconceptions are outlined in the last section.

4.1 Definition

There is no distinct definition of Public Private Partnership (PPP) around the world. However, a simple definition of public private partnership can be given as ‘a project that is based on a contract or concession agreement between a government or statutory body on the one side, and a private sector company on the other to deliver infrastructure or services on payment of user charges is called a Public Private Partnership project.’ Public Private Partnership is essentially a collaboration between the government and the private sector to create a structure in which improved value for money can be achieved through the involvement of private sector due to enhanced scope for innovation and allocation of risk to the party best able to manage it without undermining the government’s overall responsibility to the tax payer

for the quality of the service provided (Aparna Sinha, 2005). An attempt has been made by the Government of India to define the concept of PPP in Indian context. According to Approach Paper on Defining PPP, published by Government of India, PPP means an arrangement between a government or statutory entity or government owned entity on one side and a private sector entity on the other, for the provision of public assets and/or related services for public benefit, through investments being made by and/or management undertaken by the private sector entity for a specified time period, where there is a substantial risk sharing with the private sector and the private sector receives performance linked payments that conform (or are benchmarked) to specified, pre-determined and measurable performance standards. This definition tries to capture all possible characteristics which may arise when there is a need for PPP in various sectors. This can be tweaked depending upon the kind of services or infrastructure needs or the amount of investment required in different sectors and local conditions. Stated earlier, there is no standard definition for Public Private Partnership; entities engaged or dealing with PPP are defining PPP according to their needs and requirements. However, there is a need to discuss the various definitions put forward by government, agencies or entities. The following section lists the definitions of Public Private Partnerships proposed by various countries and multilateral entities.

1. Andhra Pradesh (Andhra Pradesh Infrastructure Development Enabling Act, 2001)

“Public Private Partnership” means Investment by Private Sector Participant in an Infrastructure Project of the Government Agency or the Local Authority in the State. According to the Andhra Pradesh Infrastructure Development Enabling Act, the concessionaire may or may not charge a

user fee, depending on the type of contract and the terms of the specific concession.

2. Asian Development Bank

The term “Public–Private Partnership” describes a range of possible relationships among public and private entities in the context of infrastructure and other services. PPPs present a framework that - while engaging the private sector - acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public investments achieved. A strong PPP allocates the tasks, obligations, and risks among the public and private partners in an optimal way. The public partners in a PPP are government entities, including ministries, departments, municipalities or state-owned enterprises. The private partners can be local or international and may include businesses or investors with technical or financial expertise relevant to the project. PPPs can follow a variety of structures and contractual formats. However, all PPPs incorporate three key characteristics:

- A contractual agreement defining the roles and responsibilities of the parties,
- Sensible risk-sharing among the public and the private sector partners,
- Financial rewards to the private party commensurate with the achievement of pre-specified outputs.

3. Assam Policy on Public Private Partnership in Infrastructure Development

By definition a Public Private Partnership (PPP) project means a project based on a contract or concession agreement, between a Government or

statutory entity on one side and private sector Company on the other side for delivering an infrastructure service on payment of user charges.

4. Australia

PPP projects, which are defined as being where: The private sector provides public infrastructure and any related services; and there is private investment or financing. PPPs as a procurement method are part of a broader spectrum of contractual relationships between the public and private sectors to produce an asset and/or deliver a service. They are distinct from early contractor involvement, alliancing, managing contractor, traditional procurement (design & construct) and other procurement methods.

5. Bihar Infrastructure Development Enabling Act, 2006

Public private partnership means investment by private sector participant in an infrastructure project of the Government agency or the local authority in the State.

6. Brazil

According to the Draft - Public Private Partnerships Law of Brazil, PPP contracts are deemed to be agreements entered into between government or public sector entities and private sector entities that establish a legally binding obligation to establish or manage, in whole or in part, services, undertakings and activities in the public interest, in which the private sector partner is responsible for the financing, investment and management. According to the draft law a public-private partnership may include the following:

- The total or partial assigned provision or management of a public service, which may or may not be preceded by a public works project;

- The performance of an activity within the jurisdiction of the government or a public sector entity, which may or may not be preceded by a public works project;
- Carrying out a public works project for the government or a public sector entity and
- Carrying out a public works project for sale, rental or lease to the government or to a public sector entity.

7. Canada

The Canadian Council for Public-Private Partnerships defines PPP as a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards. The term ‘public-private partnership’ carries a specific meaning in the Canadian context. First, it relates to the provision of public services or public infrastructure. Second, it necessitates the transfer of risk between partners. Partnerships British Columbia, a company owned by the British Columbia provincial government in Canada, defines PPP as a legally-binding contract between government and business for the provision of assets and the delivery of services that allocates responsibilities and business risks among the various partners. In a PPP arrangement, government remains actively involved throughout the project’s life cycle. The private sector is responsible for the more commercial functions such as project design, construction, finance and operations. A public private partnership is a partnership arrangement in the form of a long term performance-based contract between the public sector (any level of government) and the private sector (usually a team of private sector companies working together) to deliver public infrastructure for citizens. A public private partnership could

be any kind of infrastructure or service such as a new hospital or bridge or highway, a new type of technology that delivers services in a faster and more efficient manner, or a new federal government building - anything that citizens typically expect their governments to provide.

8. European Commission

The term ‘public-private partnership’ is not defined at community level. In general, the term refers to forms of co-operation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management and maintenance of an infrastructure or the provision of a service. While the choice of PPP structures is limitless in terms of financial and legal forms, the Commission is of the view that all PPPs can be defined in relation to the rules governing the choice of private partners and the selection and application of public procurement procedures.

9. European Investment Bank

According to European Investment Bank ‘public-private partnership’ is a generic term for the relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services. The term PPP is thus used to describe a wide variety of working arrangements from loose, informal and strategic partnerships, to design-build-finance-and-operate (DBFO) type service contracts and formal joint venture companies (European Investment Bank, 2004).

10. Germany

PPPs are aimed at increasing the efficiency of infrastructure projects by means of a long-term collaboration between the public sector and private business. A holistic approach which extends over the entire lifecycle is important here.

11. Goa Policy on Public Private Partnership

PPP projects involve transfer of public assets, delegation of governmental authority for recovery of user charges, private control of monopolistic services, sharing of risks and liabilities by the Government.

12. Gujarat (Gujarat Infrastructure Development Board Act)

The Gujarat Infrastructure Development Act covers within its purview contracts in the nature of concessions. Accordingly it defines concessions to mean means grant of financial assistance or conferment of right on Government property and public assets to a person other than the State Government, Government agency or specified Government agency, as per the terms specified in the concession agreement. Schedule 2 of the Act lists the various types of contracts covered under the definition of concession, including BOOT, Build Own Operation and Maintain, Build and Transfer, Build Lease and Transfer, Build Transfer and Operate, Lease Management, Management, Rehabilitate Own Operate and Maintain, Service Contract, Supply Operate and Transfer and Joint Venture Agreement. According to the GID Act, the concessionaire may or may not charge a user fee, depending on the type of contract and the terms of the specific concession.

13. Ministry of Finance, Government of India

The guidelines for the viability gap funding (VGF) scheme of Ministry of Finance, 'Guidelines for Financial Support to Public Private Partnerships in Infrastructure', defines PPP, as a project based on a contract or concession agreement between a government or statutory entity on the one side and a private sector company on the other side, for delivering an infrastructure service on payment of user charges. Whereas, the Scheme and Guidelines for the India Infrastructure Project Development Fund issued by Ministry of Finance, Government of India define, PPP as - 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. The preface of the Guidelines for Formulation, Appraisal and Approval of Public Private Partnership Projects, mentions that unlike private projects where prices are generally determined competitively and government resources are not involved, PPP infrastructure projects typically involve transfer of public assets, delegation of governmental authority for recovery of user charges, private control of monopolistic services and sharing of risks and contingent liabilities by the Government. Protection of user interests and the need to secure value for public money demand a more rigorous treatment of these projects.

14. International Monetary Fund

According to IMF public-private partnership refers to arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. In addition to private execution and financing of public investment, PPPs have two other important characteristics: there is an emphasis on service provision, as well as investment, by the private sector; and significant risk is transferred from the government to the private sector. PPPs are involved in a wide range of social and economic infrastructure projects, but they are mainly used to build and operate hospitals, schools, prisons, roads, bridges and tunnels, light rail networks, air traffic control systems, and water and sanitation plants.

15. Madhya Pradesh

PPP Project means a project based on a contract or concession agreement between a government or statutory entity on one side and a private sector company on the other. The essential elements of a PPP Project are as follows:

- Fixed Concession period
- Pre-determined user charges/tariff
- Pre-determined scope of work for the private entrepreneur
- Pre-determined bidding parameters, i.e. VGF/Premium/Revenue Sharing/
- Lease Rent
- All conditions, specifications, and project agreements have been frozen prior to inviting final bids
- Required land for the project must be available with the implementing agency.

16. Organisation for Economic Cooperation and Development (OECD)

OECD defines public-private partnership as an agreement between the government and one or more private partners (which may include the operators and the financiers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners.

17. Portugal

According to Parpublica SA, a state owned company acting as PPP knowledge centre in Portugal ‘public private partnership’ shall mean the contract or contracts by which private parties accept the obligation and make their commitment to provide the public partner with efforts to satisfactorily

address a collective need, and in which the funding and responsibility for the investment and undertaking are assumed, in whole or part, by the private partners. Parpublica SA excludes the following contracts from the definition of PPP

- Public works contracts,
- Rents and leases,
- Public contracts of supply,
- Any public-private partnership involving present value of public payments to the private partners of less than 10 million euros or an investment of less than 25 million Euros, excluding from these sums funds obtained from European Community sources.
- Any other contract for the supply of goods or services for a period of time equal to or less than three years that does not involve the automatic assumption of obligations on the part of the public partner coming at the end of the contract period.

18. Rajasthan Social Sector Viability Gap Funding Scheme

Public Private Partnership (PPP) Project means a project based on a contract or concession agreement, between a Government or an autonomous organization of the government or a local body on the one side and a private organization or not-for-profit organization, on the other side, for setting up or taking over an existing social sector service with or without payment of user charges.

19. Republic of Ireland

A PPP is an arrangement between the public and private sectors (consistent with a broad range of possible partnership structures) with clear agreement on shared objectives for the delivery of public infrastructure and/or public services by the private sector that would otherwise have been provided

through traditional public sector procurement. A particular arrangement or project may constitute a PPP where the following key characteristics are present:

- Shared responsibility for the provision of the infrastructure or services with a significant level of risk being taken by the private sector, for example, in infrastructure projects, linking design and construction with one or all of the finance, operate and maintain elements;
- Long-term commitment by the public sector to the provision of quality public services to consumers through contractual arrangements with private sector operators;
- Better value for money and optimal allocation of risk, for example, by exploiting private sector competencies (managerial, technical, financial and innovation) over the project's lifetime and by promoting the cross-transfer of skills between the public and private partners.

20. Singapore

PPP refers to long-term partnering relationships between the public and private sector to deliver services. It is a new approach that Government is adopting to increase private sector involvement in the delivery of public services. With PPP, the public sector will focus on acquiring services at the most cost-effective basis, rather than directly owning and operating assets. For example, if PPP is used to develop a water treatment plant, the private sector will be engaged to not only construct the plant, but also to design, operate, maintain and raise financing to build the plant to supply water to the public agency. Hence, instead of owning and operating the water treatment plant, the public agency purchases the water directly from the private sector. This means that the private sector has more room to introduce innovation into the delivery of public sector services.

21. South Africa

Public-private partnership means a commercial transaction between an institution and a private party in terms of which the private party-

- Performs an institutional function on behalf of the institution; and / or
- Acquires the use of state property for its own commercial purposes;
- Assumes substantial financial, technical and operational risks in connection with the performance of the institutional function and/or use of state property; and
- Receives a benefit for performing the institutional function or from utilising the state property, either by way of:
 - i. Consideration to be paid by the institution which derives from a revenue fund or, where the institution is a national government business enterprise or a provincial government business enterprise, from the revenues of such institution; or
 - ii. Charges or fees to be collected by the private party from users or customers of a service provided to them; or
 - iii. A combination of such consideration and such charges or fees.

22. Standard and Poor's

Standard and Poor's definition of a PPP is any medium - to long-term relationship between the public and private sectors, involving the sharing of risks and rewards of multi-sector skills, expertise and finance to deliver desired policy outcomes (Standard and Poor's 2005).

23. United Kingdom

Public private partnerships (PPPs) are arrangements typified by joint working between the public and private sector. In the broadest sense, PPPs can cover all types of collaboration across the interface between the public and private sectors to deliver policies, services and infrastructure where

delivery of public services involves private sector investment in infrastructure, the most common form of PPP is the Private finance initiative. In the context of infrastructure and public services, the term PPP means project and program - based PPPs involving the provision of assets. Such PPP exhibits the following key features:

- A joint working arrangement between the public and private sector, which may be by contract or through a joint venture company, to deliver infrastructure assets and usually, but not always, the ongoing maintenance and operation of the infrastructure assets and the delivery of associated services;
- Risks are allocated between the parties on the basis of which party is best placed to manage and bear the risk. Typically design, construction and operational risks are expected to be borne by the private sector; other risks which are shared are allocated in the way that best incentivizes both parties to manage the risks;
- Generally a PPP is a long term (25-30 years) arrangement between the parties but can be shorter term, for example where ongoing maintenance of the infrastructure assets and associated services are excluded;
- Where ongoing operation and maintenance of the infrastructure assets and delivery of associated services are included, the public sector may pay the private sector for all or part of the use of the infrastructure over the life of the arrangement;
- Payment to the private sector is structured in such a way as to ensure the private sector is incentivized to deliver the required services or obligations under the arrangement;

- Payments are usually made by the authority but can be made by the end user, for example for the use of a toll road;
- The public sector is seeking to access private sector management and expertise to drive value for money; and
- The project is often financed either in part or in whole through private finance.

24. United States of America

The US Department of Transportation defines PPPs as essentially a form of procurement. Unlike conventional methods of contracting for new construction, in which discrete functions are divided and procured through separate solicitations, PPPs contemplate a single private entity, typically a consortium of private companies, being responsible and financially liable for performing all or a significant number of functions in connection with a project. In transferring responsibility and risk for multiple project elements to the private partner, the project sponsor relaxes its control of the procurement, and the private partner receives the opportunity to earn a financial return commensurate with the risks it has assumed. Structured in multiple forms, PPPs vary generally according to the scope of responsibility and degree of risk assumed by the private partner with respect to the project. In each case, the private partner assumes financial risk in some form - for example, through an equity investment, liability for indebtedness, a fixed priced contract or a combination thereof. The National Council for PPP, which is a think tank representing a collaboration between public sector and private sector entities, defines PPPs as a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the public. In addition

to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

25. World Bank (Public-Private Infrastructure Advisory Facility Group)

A public-private partnership (PPP) involves the private sector in aspects of the provision of infrastructure assets or of new or existing infrastructure services that have been traditionally provided by the government.

4.2 Common Elements in Definitions of PPP

There may be number of definition and procedures for inviting a PPP project. But, the idea behind a PPP is very clear which includes better services, profitability for both public and private partners and successful implementation and execution of project. The common defining elements that come out of discussion above can be summarized as follows:

(a) The primary feature of a PPP is that it is a contract or an arrangement between a government entity and a private entity for the delivery of the public infrastructure services (Aarushi Barowalia), in which the partners should co-operate with each other towards a common goal, but in reality each partner in a PPP is a self interested player, that means, each partner is capable of bargaining on its own behalf, rather than referring to authorities.

(b) Provision of public infrastructure or public services through the private sector, with substantial risk transfer to meet government or social needs, and rewarding/ remunerating the private sector based on outputs appear to be the common elements used in defining PPPs across countries. PPP seek equilibrium between public and private sector for achieving mutual benefits.

(c) The specification whether the private sector will necessarily bring in the private investment has not been specified in majority of the cases. In

many countries, it is the requirement of service delivery by private sector that drives the question of whether and how much of private investment is required for the project. Hence, the focus is on service delivery to meet public service or infrastructure needs rather than asset creation or investments.

(d) In PPP, the participants are expected to bring or transfer some material and immaterial resources to the partnerships. The private sector are expected to bring technical, managerial expertise as well as financial resources into design, construction and maintenance of the infrastructure. Whereas, the public sector are expected to bring in the public assets and commitments in the partnership and transfer authorities to the private sector.

(e) None of the definitions has specified that remuneration to private sector or PPP will necessarily be through user charges. In fact, in many countries, such as UK, the majority of PFIs are provided payments by the government agencies.

(f) PPPs involve sharing of responsibilities and risks. In PPPs, responsibilities are allocated based on the roles played by each parties whereas, risks are shared in the principle that they should be borne by the partner who is in better position to control and manage them.

4.3 Need to Define PPP

There is varying understanding amongst government, authorized entity and stakeholders as to what constitutes a Public Private Partnership. There are views that a PPP is only when there is private investment, while others contend that PPPs include all forms of interactions between the public sector and the private sector, from consultations or policy dialogue and collaboration, to private provision of assets and services. A PPP project can differ from one other starting from the conceptualization, investment

required, kind of services to be offered, the target group and the overall time frame. The authority would like to define a PPP which suits them most and fulfill their desired outcome. A PPP invites a score of benefits and associated risks which should be analyzed since its inception. A separate department or ministry should be in place to look after the complexities involved with the PPP. Therefore, it is imperative for the authority to suitably define the public private partnership.

Definitions are required to identify eligible projects or arrangements that could be recipients of desired benefits or applicable procedures or treatment. For example, a project when designated as a PPP, can access various modes of government support like viability gap funding, project development funding, etc. Further, some of the PPPs might involve contingent liabilities for the sponsoring government, in various forms, such as, liabilities towards lenders in case of contract termination or minimum revenue guarantees. The contingent liabilities require the government to make requisite provisions in its budgets. The potential fiscal implication of PPPs makes the parameters for its designation important. Furthermore, protection of user interests in PPPs and the need to secure value for public money, demand a more rigorous treatment of such projects. The provision of the government support also requires a higher public scrutiny of projects designated as PPPs. The specific requirements of the aspects mentioned above might require a different set of projects to be designated as PPPs. For provision of government support to PPPs, the government might give importance to requirements of private investment and user charges. On the other hand, for approval of projects, the government would like to scrutinize even those projects where private sector is engaged in providing a critical service to general public irrespective of whether there is private investment or not. To

cater to such different objectives and context, each competent government authority that uses the PPP definition to designate projects as PPP would need to specify its own set of essential conditions. Such conditions should be in addition to the common definition and should be exclusively for a specific purpose like grant of VGF support, public scrutiny or provisioning of contingent liabilities, etc. In sum, a well defined PPP have greater chances of achieving the desired outcome and provide the citizens better services along with the satisfaction for the sponsoring authority.

4.4 Why Public Private Partnerships?

A PPP is expected to achieve economy efficiency gains and reducing government overload. It is argued that any public services provided by the government can be performed by the private sector in a better way. A private player can deliver better results because of managerial efficiency and professionalism. In the way, economic efficiency can be gained by allowing the free market. Also, a PPP can reduce some of the burden of the government. PPP can ensure less financial burden on the government. According to Van Slyke (2003), even when a competition fails to result in a contract, the taxpayers still win because the competition forces government agencies to become more efficient. PPPs can help alleviate chronic underinvestment in capital intensive projects. They can serve as a vehicle for the injection of private sector financing while allowing government to maintain their fiscal targets and avoid taking on additional debt.

Poor performance of most public sector undertakings and corruption led to poor delivery of public services resulting in growing discontentment among the people. It requires evolvement of an efficient management for delivery of public services. Need of PPP can be viewed from multiple angles comprising of the public, which includes governments, sponsoring authority,

etc. the private participants, including a company, joint venture or consortium and the citizens availing the facility. It is being argued that PPP offers a win-win solution for the public sector, the private sector and members of the public. PPP allows the public sector to get better value for money in the delivery of the public services. Through closer partnership with the private sector, efficiency and effectiveness gains can be reaped. The private sector can hope for making some profit out of this venture and actively participate in the process of nation building and helping fellow citizens in enjoying a better level of services. A PPP offers opportunities for the private sector to do business with the government and thus enlarge the business market for the private sector. The public can look forward to have the timely and efficient sustained delivery of services. The above discussed objectives can be stated in the following manner:

(i) Private Sector Innovation: PPP allows government to tap in to the private sector's capacity to innovate. Transfer of responsibilities of design, construction and operation gives enormous incentives to the private sector to innovate and develop new construction, managerial and operational techniques. The services required under a PPP can force a private player to introduce innovative solutions to meet the objectives of the PPP project.

(ii) Efficient and Cost Effective Delivery of Services: PPPs are expected to provide public services of higher quality at lower cost for the public users. PPPs provide public services more efficiently. A PPP approach provides potential benefit of reducing costs and delivering higher quality for the same cost both in the construction phase and in the operation phase. As PPP does not depend only on resources from the government, but also incorporates private players skills and

managerial expertise in building, operating and maintaining public service projects.

- (iii) **Less Fiscal Burden:** PPP can help alleviate the government's fiscal pressure. The government in some cases can postpone the expenses till the completion of the project as the private players would temporarily pay the construction expenditure through borrowings from banks.
- (iv) **Optimal Whole Lifecycle Costing:** Optimal whole lifecycle costing can be achieved by outsourcing design, build, maintain and operate to the same private firm. The firm would then be in a good position to optimize the design for economy in construction, operations and maintenance. In conventional government procurement approaches, economies of scale can be achieved as design, construction, maintenance and operations are undertaken by different entities. The traditional way of procuring and carrying out the work, in general, takes more time and costly.
- (v) **Better Asset Utilization:** Existing assets or new assets created can be utilized in a better way by sharing government assets/facilities with third-party users. Government assets/facilities can be integrated with facilities to disseminate the services on sharing basis. For example, a kiosk established by a local body to collect taxes can be utilized not only for collecting taxes but also be used to provide various other facilities like collection of other department bill, providing information on agriculture or prices which will reduce the operational cost of the centre, thus leads to better utilization of assets.
- (vi) **Optimal Sharing of Responsibilities:** There can be an optimal sharing of responsibilities between the public and the private sector.

In a PPP project, government and the private sector share the responsibilities of delivering a service. The responsibilities are allocated so as to exploit the expertise of both the public and the private parties. This way each one can add value to a specific part in the service delivery process. For example, governments may not have adequate skilled workers or expertise in running a wastewater treatment plant using advanced technologies. However, government may possess or have easy access to procure desired land for such facilities. Hence government may share the responsibility of identifying the land to develop the facility whereas the private player may be given the responsibility of designing and implementing the facility.

4.5 Characteristics of a Public Private Partnership Projects

Public private partnerships (PPP) are arrangements between government and private sector entities for the purpose of providing public infrastructure, community facilities and related services. Such partnerships are characterized by sharing investment risk, responsibility and reward between partners. The reasons for establishing such partnerships vary, but generally involve the financing, design, construction, operation and maintenance of public infrastructure services. Unlike private projects in which Government resources are not involved, PPP involves at least some of the following:

- Transfer of public assets such as land, infrastructure etc.
- Delegation of government authority for collection of user charges
- Private control of monopolistic services
- Sharing of risks and contingent liabilities
- Long term relationship between Government and the private sector company extending from between 5–30 years or more.

The underlying logic for establishing public private partnerships is that both the public and the private sector have unique characteristics that provide them with advantages in specific aspects of service or project delivery. The most successful partnership arrangements draw on the strengths of both the public and private sector to establish complementary relationships. PPP brings together core complementary competencies of partners. The roles and responsibilities of the partners may vary from project to project. For example, in some projects, the private sector partner will have significant involvement in all aspects of service delivery, in others, only a minor role. While the roles and responsibilities of the private and public sector partners may differ on individual servicing initiatives, the overall role and responsibilities of public sector do not change. Public private partnership is one of a number of ways of delivering public infrastructure and related services. It is not a substitute for strong and effective governance and decision making by government. In all cases, public sector remains responsible and accountable for delivering services and projects in a manner that protects and furthers the public interest. PPP offers innovative solutions that are often unique and may not be easily replicable. These projects generate value through optimization or efficiency effects which could not be achieved by the partners acting independently.

4.6 Advantages of PPP Projects

PPPs are expected to combine the skills, expertise and experience of both the public and private sectors in a better way. These combinations of skills deliver higher standards of services to customers or citizens. The public sector hope to provide better governance, policy support and also takes care of social, environmental and political risks. And, the private sector brings operational efficiency, innovative

technologies, managerial effectiveness, access to additional finances, and construction and commercial risk sharing. PPP projects ensure efficient use of resources, whether public or private. Availability of modern technology and optimal risk allocation ensures improved delivery of public services. PPPs also help in the capacity development of both the partners. The private partner plays the role of financier, builder and operator of the service or facility, while the role of government gets redefined to as one of facilitator and enabler.

4.7 Disadvantages of PPP Projects

A PPP project with various advantages may prove to be a bad contract agreement on number of accounts. PPP may have various disadvantages as well. It is argued that the PPP projects prefer the economic aspects of the project to the social and environmental aspects. It is alleged that the PPPs is a way of relieving the government of its responsibilities, and deviate from the concept of welfare state, where only the fittest survive and the poor are left to cope as best they can. A PPP project can take long time to get implemented as lot of time goes into preparation, designing, bidding, etc. There are delays and slow preparation of individual PPP projects, if the preparation of the project is to be of high standard. The requirement of transparent procedure also leads to delay in the implementation of a PPP project. Defining the terms and conditions, competencies and responsibilities, pricing all may take lot of time to conclude a contract and finally start the implementation process. The cost of borrowing is generally higher for the private sector, which can erode some of the potential economic benefits of PPPs. Also, there may be considerable negative financial impacts in the case the

partnership has to be repudiated. Lack of experience of partners, particularly of the public sector while contracting such projects, may work in favour of profit-oriented private players. Private player may be interested in making money only and take advantage of asymmetry of information.

4.8 Various Forms of PPP

Public private partnerships can vary in the degree of risk allocated between partners; the amount of expertise required on the part of each partner to negotiate contracts and the potential implications for users. The allocation of risk between partners is a key consideration that affects other aspects of partnership agreements, including: rewards; investments, and responsibilities. The following concession agreement or arrangements with their variation and combinations may be arrived at by the government agency or the local authority for undertaking projects. The arrangements enumerated hereinafter are indicative in nature and the government agency or the local authority shall be entitled to evolve and arrive at such concession agreement or arrangement incorporating any of the arrangements as may be found necessary or expedient for any specific Project. Adequate care should be taken while preparing a PPP project as this would lead to claim of public resources by private player which need to be carefully assessed before identifying any project.

- i. Build-and Transfer (BT):** A contractual arrangement whereby the Developer undertakes the financing and construction of a given infrastructure or development facility and after its completion hands it over to the Government, Government Agency or the Local Authority. The Government, Government Agency or the Local Authority would

reimburse the total Project investment, on the basis of an agreed schedule. This arrangement may be employed in the construction of any infrastructure or development projects, including critical facilities, which for security or strategic reasons must be operated directly by the Government or Government Agency or the Local Authority.

ii. Build-Lease-and-Transfer (BLT): A contractual arrangement whereby a Developer undertakes to finance and construct infrastructure Project and upon its completion hands it over to the Government or Government Agency or the Local Authority concerned on a lease arrangement for fixed period, after which ownership of the facility is automatically transferred to the Government or Government Agency or the Local Authority concerned.

iii. Build-Operate-and-Transfer (BOT): A contractual arrangement whereby the Developer undertakes the construction, including financing of a given infrastructure facility, and the operation and maintenance thereof. The Developer operates the facility over a fixed term during which he is allowed to a charge facility users appropriate tolls, fees, rentals and charges not exceeding those proposed in the bid or as negotiated and incorporated in the contract to enable the recovery of investment in the Project. The Developer transfers the facility to the Government or Government Agency or the Local Authority concerned at the end of the fixed term that shall be specified in the Concession Agreement. This shall include a supply-and-operate situation which is a contractual arrangement whereby the supplier of equipment and machinery for a given infrastructure facility, if the interest of the Government, Government Agency or the Local Authority so requires, operates the facility providing in the process

technology transfer and training to Government, Government Agency or the Local Authority nominated individuals.

- iv. Build-Own-and-Operate (BOO):** A contractual arrangement whereby a Developer is authorized to finance, construct, own, operate and maintain an infrastructure or Development facility from which the Development is allowed to recover his total investment by collecting User Levies from facility users. Under this Project, the Developer owns the assets of the facility and may choose to assign its operation and maintenance to a facility operator. The transfer of the facility to the Government, Government Agency or Local Authority is not envisaged in this structure; however the Government, Government Agency or Local Authority may terminate its obligations after specified time period.
- v. Build-Own-Operate-Transfer (BOOT):** A contractual arrangement whereby a Developer is authorized to finance, construct, maintain and operate a project and whereby such Projects is to vest in the Developer for a specified period. During the operation period, the Developer will be permitted to charge User Levies specified in the Concession Agreement, to recover the investment made in the Project. The Developer is liable to transfer the project to the Government, Government Agency, or the Local Authority after the expiry of the specified period of operation.
- vi. Build-Transfer-and-Operate (BTO):** A contractual arrangement whereby the Government or Government Agency or the Local Authority contract out an infrastructure facility to a Developer to construct the facility on a turn-key basis, assuming cost overruns, delays and specified performance risks. Once the facility is

commissioned satisfactorily, the Developer is given the right to operate the facility and collect user charges under a concession agreement. The title of the facilities always vests with the Government, Government Agency or the Local Authority in this arrangement.

vii. Contract-Add-and-Operate (CAO): A contractual arrangement whereby the Developer adds to an existing infrastructure facility which it rents from the Government, Government Agency or the Local Authority and operates the expanded Project and collects User charges, to recover the investment over an agreed franchise period. There may or may not be a transfer arrangement with regard to the added facility provided by the Developer.

viii. Develop-Operate-and-Transfer (DOT): A contractual arrangement whereby favorable conditions external to a new Infrastructure Project which is to be built by a Developer are integrated in the BOT arrangement by giving that entity the right to develop adjoining property and thus, enjoy some of the benefits the investment creates such as higher property or rent values.

ix. Rehabilitate-Operate-and-Transfer (ROT): A contractual arrangement whereby an existing facility is handed over the private sector to refurbish, operate (collect User Levies in operation period to recover the investment) and maintain for a franchise period, at the expiry of which the facility is turned over the Government or Government Agency or the Local Authority. The term is also used to describe the purchase of an existing facility from abroad, importing, refurbishing, erecting and consuming it within the host country.

x. **Rehabilitate-Own-and-Operate (ROO):** A contractual arrangement whereby an existing facility is handed over to the operator to refurbish and operate with no time limitation imposed on ownership. As long as the operator is not in violation of its franchise, it can continue to operate the facility and collect User Levies in perpetuity.

4.9 Risks Factors in PPP

While many PPP projects has achieved good results, but PPP projects are also prone to some risks ranging from asymmetry of information, economic as well as social risks (Akintola Akintoye et.al., 2003). PPP pose risks to the public sector as well as private players and each project would need to be examined for which partner is best placed to assume a particular risk in each case. Each PPP project is unique and would need to be monitored with respect to the following risks:

High Asymmetry of Information: There can be asymmetry of information which can work in favour private players. They may take advantage and may deviate from the original motive or objective of a PPP project. This may affect the quality and cost of services and hence affect the service receiver (Ralf Caers et.al., 2006).

Difficulty and Cost Associated with Monitoring: A PPP requires constant monitoring for quality assurance and proper implementation of a PPP project. The monitoring may be tedious work and may increase the over all costs of the project.

Sustainability: There is always a risk of demand of social services. The demand risk is related to the volumes of demand for the service provided by the completed infrastructure. The demand for a particular service is very difficult to assess and forecast due to the absence of

reliable data. Historic information and data documenting the demand level even with the extensive investigation of the past trend of demand, there will always be a residual risk on how much users the project could actually attract. The demand risks can pose problem for the sustainability of a PPP project.

Infrastructure Risks: There are risks in establishing an infrastructure for the PPP projects. These may be with respect to delay in establishing infrastructure, cost overrun, or technical faults. The construction risk primarily comes from the delays in completion and cost overruns (Meredith and Samuel, 2006). The construction risk may be caused by technical difficulties and/ or poor management, delay in land acquisition, obtaining necessary permissions and licenses. There may be escalation in cost of raw materials and labours. Also, in some places, unavailability of construction equipment and lack of construction technologies can lead to infrastructure risks.

Policy Risks: Sector specific policy risks may arise from the fact that the outcome of a project is dependent on specific sector policies and there are probably major force risks concerning political policies (Flyvbjerg, 2003). The potential occurrence of policy changes may result in contract termination, output specification changes, withdrawal of government support network, tax and law changes. The reasons for sector- policy risks may include the unstable government, elections, immature institutional environment and any actions of the government that could load impacts on the profitability of a project (Schaufelberger, 2003).

Legal Risks: Owing to the power disparity between the partners in PPP contracts, there is risk for the private players in case of non-existence of proper legal framework. The ability of a project to make earnings highly depends on government's concerned policies and regulations. For instance, terminating the contract unilaterally, placing toll price ceilings and increasing taxes on revenues would severely reduce the returns to operators to recoup the costs, repay the debts and earn profits. Incomplete legal systems and unstable institutional environments would cause changes in the rules and norms that applied to the project before and thus cause losses of the project to cater to new rules and norms.

Market Risk: This refers to the continued market interest in the service due to new trends, competition or technical obsolescence. Market risks relate to the overall economic development that affects economic activities in a country (Flyvbjerg, 2003). Such risks may be caused by general economic downturn and phenomenon of inflation. In a user pay PPP model, the risk of a reduction in economic activity will influence the demand for the contracted service, which will make the project revenue below projections. In addition, the inflation risk will lead to the value of payments received during the project period devaluated and thus reduce the real returns of the private actor. In some cases such as those in Indonesia, the macroeconomic shock has increased the difficulties of implementation of the projects and accelerated their failures.

4.10 Misconceptions

Given the numerous forms of public private partnership potentially available to public sector, there may be confusion as to what

constitutes a public private partnership. There is always a debate over the viability and reach of PPP. Various scepticisms are associated with PPP about its nature, method, benefits and motive of private players. There is a common perception that private players will not be interested in providing services but in making profits at the cost of taxpayers' money. Various stakeholders say that they may be more interested in exploiting the resources and facilities made available to them. The most common of these misconceptions include:

(i) Public private partnerships are the same as privatization.

Only one form of public private partnership, known as Build-Own-Operate (BOO) can be described as coming close to privatization. All other forms require an ongoing partnership between the private and public sectors. One of the key reasons for considering public private partnership is the ability to introduce efficiency in service delivery at a reasonable cost and in some cases promote competition in the provision of services, either between private firms or between the private and public sectors. Full privatization merely transforms a public monopoly to a private monopoly such that the benefits of public private partnership are not realized.

(ii) By entering into a PPP public sector loses control over the provision of services.

By entering into a public private partnership, public sector does not give up its ability to implement its policies or regulate the provision of services. The public sector establishes the ground rules and has the ability to shape the public private partnership to reflect its own objectives, policies and regulations. In fact, public sector may actually have more control, in that it has well defined contractual remedies in a

public private partnership arrangement that it may not have with its own management and staff.

(iii) Public private partnerships apply only to infrastructure projects.

Public private partnerships can be an effective and innovative way of delivering a range of government services and facilities. While large infrastructure projects tend to capture the most public attention, public private partnerships can be used to deliver services that do not involve capital projects. Examples include provision of data services, collection of taxes/user charges and road maintenance.

(iv) The principal reason for public sector entities entering into PPP is to avoid debt.

The principal reasons for public sector becoming involved in public private partnerships are to benefit from increased efficiency, shorter implementation time, greater innovation and ultimately better value in the delivery of services brought about by increased competition. The ability to finance a project so that the debt is “off book” should not be the prime motivation for entering into a public private partnership in that the public sector and the ultimate users of the service are still responsible for servicing the debt in one way or another. The emphasis should be on structuring creative and cost-effective ways of delivering services, not on creative accounting.

(v) The quality of service will decline under PPP.

Quality of service may not depend on whether the service is delivered in a traditional manner or through public private partnerships. The public sector has the ability to stipulate the quality of service to be provided and government can ensure that it can enforce provisions of the contract dealing with quality control. The nature of public private

partnerships suggests that the quality of service would not only be maintained, but can also be enhanced. It is in the private partner's interest to invest in the service, become more efficient, and enhance the quality of service to attract more customers or provide additional services to customers.

(vi) The cost of service will increase to pay for the private partner's profit.

Governments sometimes resist public private partnerships because they believe that the cost of providing the service will increase to reflect the profits the private partner must realize to stay in business. While the private partner will need to make a profit, the profit must be earned within the existing or a lower price for the service. Presumably, the public sector would only enter into a public private partnership if the price of providing a given service was lower than cost if provided internally or if a higher level of service could be provided for the same price by the private partner. The private partner's profit can only be realized through increased productivity or expansion of service, not through higher prices.

4.11 Concluding Remarks

The various features of a PPP project with respect to its definition, need, forms, risk and misconceptions outlined above provides the much needed conceptual clarity about a PPP project. This discussion provides the much needed theoretical aspect of PPP. The practical aspects, successes and failure associated with PPP projects in social sector have been discussed in the next chapter through analysis of various PPP projects.

CHAPTER 5

PPP PROJECTS IN INDIA: CASE STUDY

This chapter is divided into two sections. First section analyses various successful as well as failed projects operated in different parts of the country. The case study methodology is followed to analyze the contract agreement, operational issues and functioning of a PPP project. PPP initiatives in the field of education, health and water & sanitation operational in various states of India are taken into consideration. A small discussion is provided on the failed PPP projects to better understand the factors which lead to failure of a project. The objective is to gain a broad understanding of the various forms of PPP being considered and provide avenues for PPP in Bihar to be discussed in the next section of the chapter.

Second section starts with findings and opinions as expressed by various key stakeholders about the potential of PPP in Bihar. Focused group discussion and informal interviews were held to seek opinion on different perspectives on the subject matter. Based on this discussion and case study analysis, key lessons and guiding principles for a new PPP project to be emulated in Bihar is provided in next part of the section. After understanding the various issues related to PPP, the potential area where a PPP can be started in Bihar is discussed. All three sectors under consideration are discussed separately. Realizing the potential of PPP, state government has initiated various PPP projects in the state. These initiatives are presented in the Annexure I of the thesis.

Section I

This section analyses a total of 23 PPP projects running in different parts of the country. Five PPP projects in education sector and nine projects each in health and water supply and sanitation are discussed. This section also discusses some of the failed PPP projects and the likely reasons for the same. Critical analysis of projects will highlight the factors which lead to success or failure of a project.

5.1 PPP in Education

There are many PPP projects under education sector across the country having different objectives and scope (Annexure II). The detailed information of selected PPP projects spread across different regions having certain desired outcome are discussed in the following section.

(I) 1,000 Schools Computer Education Project, Andhra Pradesh

1,000 Schools Computer Education Project, Andhra Pradesh is a project sponsored by School Education, Government of Andhra Pradesh. It is spread over various districts in Andhra Pradesh. Contract agreement between public and private players is BOOT. The cost of the project is Rs. 273.9 Crores. The reason behind this project was that there was lack of computer literacy in the state government run schools. The government hoped to increase the computer literacy among its students. The main purpose of the project is to impart computer education to all the children of classes VI to X and also to the teachers in 1,000 Government high schools. The 1,000 Schools Computer Education Project was started during 2002-03 for implementation for five years from 2002-03 to 2006-07. The Government have extended the project period for two more years i.e., from 12-12-2007 to 11-12-2009 and permitted to run the scheme by the existing

agencies. Project was completed by 11 December, 2009. There was increase in the learning level of students as well as teachers. The project was completed successfully across the state and government showed interest in running the programme. Government support was crucial in implementing the project. Well defined MoU and management on part of private players played an important role in achieving the target (<http://ppp.cgg.gov.in> accessed on May 15, 2012).

(II) Mid-day Meal Program (Hyderabad & Secunderabad)

Sponsoring authority for Mid-day Meal Program (Hyderabad & Secunderabad) project is School Education, Government of Andhra Pradesh. It covers Hyderabad & Secunderabad, Tirupathi, East Godavari, Visakhapatnam, Nellore, Kadapa, Medak, Guntur districts of Andhra Pradesh. This project is running on BOOT type PPP project. The total cost of this project is Rs. 26.85 Crores. Realizing that there was low school enrolment ratio and high drop-out rate among poor, the government roped in private players to improve the situation. The main purpose of PPP was to provide hygienic food at school in the afternoon to increase the attendance of the students. With this scheme, Government hoped to retain the students in the school and increase enrolment ratio. Because of quality food served to students, there is interest among poor students to attend the school. The purpose is achieved with increase in enrolment ratio among poor students. The government by bringing private players can achieve its development indicators as these private players can provide services in a more efficient way. There was capacity development of school staff and they got trained in managing school affairs in a better way (<http://ppp.cgg.gov.in> accessed on May 15, 2012).

(III) Model School, Karnataka

Government of Karnataka started a project named Model School in 182 villages spread over six districts of the state. The current PPP project was started on collaboration mode with the private players. The cost of project is not clear. There was absence of computer aided learning through equipment such as computers, TV, DVD player, two-in-one, public address system and power back-up. The private player named, Byrraju Foundation adopted 260 schools for providing computer-aided learning (CAL) as integral part of foundation's Model School programme. Content in the form of CDs, DVDs were sourced from UNICEF, National Green Corps, International Literacy Institute and Eureka Multimedia covering subject areas such as language development, science, mathematics, environment and fun filled activities. The private player responsibility included sourcing of equipment, content and teachers' training. The impact of CAL on the children was impressive. They demonstrated good understanding of the concepts as well as familiarity with computers and IT terminology. They are showed interest in attending school as a way of fun filled learning. Capacity development of teachers involved in the project was also achieved. It directly benefitted 1,20,000 students; 2,000 teachers and impacts over 2,00,000 rural population in Andhra Pradesh. The village community contributed 25 per cent of the cost of equipment and takes part in the monitoring the implementation of the scheme. The foundation contributed the same amount and the rest was borne by the Education Department. The contribution of villagers was significant as one of the stakeholders. It increased mutual collaboration between the villagers, foundation and the government in achieving the desired result.

(IV) Establishment of Senior Secondary School in Blocks, Punjab

Punjab Education Development Board, Government of Punjab started an initiative named Adarsh School in rural areas of Punjab. The objective is to establish one school in each rural block of the state. The project was running on lease-out mode to Bharti Foundation. The cost of project is Rs. 7.5 crores per school. The main issue for starting this project is that there is no facility for imparting quality school education for the poor meritorious and brilliant students which may provide them equal opportunities of education at par with their counterparts in urban areas. The purpose of this initiative is to impart free and quality education to the brilliant and economically poor rural students in each block of Punjab with the help of private players. Under this project, land is given to private players on 99 years lease and 50 per cent of the capital cost will be provided by the State government. Operational cost of school is shared on 70:30 basis between government and private partner. Risks are suitably allocated between both the partners. After the start of this initiative, it is reported that there was zero dropout during the year 2010-2011. In total, 47 per cent of students scored over 75 per cent in cycle III internal assessment. In March 2011, 74 per cent students had more than 90 per cent attendance. This initiative received excellent response from the community. As a result, all five established school doubled their capacity of students. The main lessons drawn from this project is that two tier management structure ensured quality and maintenance of school. Flexibility in provision and assurance of good quality is fundamental for achieving the desired results. Effective political management was another reason which created conducive environment and led to success of this initiative (Public Private Partnerships in Secondary School, World Bank, 2011).

(V) School Initiative in Rajasthan

Government of Rajasthan with an aim to improving quality of education in existing government schools invited private players on management contract basis to run all government schools in Rajasthan. The cost of project was drawn from the Government/ Sarva Shiksha Abhiyan funding. The government school infrastructure is in dilapidated conditions and lack basic infrastructure. The school building was not properly maintained and in bad condition. Purpose of PPP is to improve quality of education in existing Government schools. The private partner will bear the entire capital cost upfront. The State government would provide a capital incentive in installments. The State government would also reimburse a part of the recurring cost for the sponsored students through vouchers. Fifty per cent of each school would be reserved for students sponsored by the state government. As a result of this initiative, enrolment in school increased from 4,238 to 6,670 students. The facility of drinking water increased from 34 to all 49 schools. Electricity connectivity increased from 3 to 49 schools. All schools carried out renovation and plumbing work. Computers were allocated to each school from none in previous system. The project targeted the populations who are being poorly served by existing education delivery system. A strong regulatory framework and careful implementation of the project delivered the good result. Effective political management helped in proper implementation of the project initiative (Public Private Partnerships in Secondary School, World Bank, 2011).

PPP projects discussed above are summarized in table 5.1.

Table 5.1: PPP Projects in Education Sector

Name of Project	Type	Remarks
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1,000 Schools Computer Education Project, Andhra Pradesh	BOOT	The project achieved the desired result. Government support was crucial. Well defined MoU and management.
Mid-day Meal Program (Hyderabad & Secunderabad)	BOOT	The purpose was achieved. Efficient private player. Capacity development of school staff.
Model School, Andhra Pradesh	Collaboration	Active participation of village community. Villagers shared 25 per cent of funding. Increased mutual collaboration between the villagers, foundation (private player) and the government.
Establishment of Senior Secondary School in Blocks, Punjab	Lease-out	Two tier management structure ensured quality and maintenance of school. Flexibility in provision. Effective political management.
School Initiative in Rajasthan	Management Contract	Strong regulatory framework and careful implementation of project. Effective political management.

Study of five PPP projects in education sector gives an opportunity to understand the reasons behind the success of a project. Among these five examples, two were on BOOT type and rest three projects on collaboration, lease-out and management contract each. This pattern highlights the issues that type of PPP project is not very crucial for the success of project. There are other factors which influence the outcome of a project. Active government backing and effective political support is crucial. Well defined MoU and the participation of stakeholders are required to achieve the result. In model school, Andhra Pradesh villagers contributed financially and also they actively participated in the implementation of the project. Involving the beneficiary and the service providers is important while designing a PPP

project. Selection of appropriate and efficient private players is vital for the success of a project.

5.2 PPP in Health

To understand the complexities involved in providing health services through PPP, we analyze selected PPP project spread across the country out of list of PPP projects in health care in India (Annexure III). The lessons learned from these initiatives will help in proposing the right framework for developing a purposeful PPP model in providing health services in the state of Bihar.

(I) Urban Slum Health Centers, Andhra Pradesh

Andhra Pradesh Commissioner of Welfare (CFW), Government of Andhra Pradesh started urban slum health centres for the poor people residing in urban slums under 74 municipalities of the State, starting in the middle of year 2000. While the UHCs were established by the State, their day-to-day management was contracted out to local NGOs and/or service providers. The cost of project is Rs. 3.1 lakhs per year per urban health centre. Every UHC was assigned a definite slum area, clearly demarcated in terms of the boundaries; average population of each UHC being 15-20,000. The UHC is located within the slum to ensure easy access for the target population. The premises for operating the UHC were provided by the Government but are managed by the NGO selected for the purpose. Until the buildings were constructed, the UHCs were housed in rented premises. The UHCs are allowed to introduce user charges to be levied from the beneficiaries and non-beneficiaries using the facility. The user charges are left to be decided locally by the UHC Advisory Committee with approval from the District Committee. About six million slum dwellers have poor health outcome due

to little access to primary health care services. They cannot afford private services. Commissioner of Welfare with the support from World Bank built 192 urban health centers in 74 municipalities. It provides RCH preventive care (like antenatal care, immunization, and sexually transmitted disease), services for childhood diseases, referrals and outreach. The project has three components namely, service delivery, community mobilization and behaviour change communication. One urban health centre has the target of covering three to four thousand households in its catchment area. NGOs involved in the project reported significant reductions in childhood illnesses, 100 per cent immunization rate, 100 per cent institutional deliveries, improvements in child nutrition and similar improvements in all other indicators. Government is committed to support the project and fund the entire project. Community involvement is strong and local advisory committee involves local stakeholders in selecting NGO and oversees management. There is heavy emphasis on performance and achievement of results. The government provides a rigorous training program for NGOs. The project was successful and a legitimate public-private partnership that is both replicable and scalable (Vinod B. Annigeri, et. al., 2004).

(II) Arpana Swasthya Kendra, Delhi

A health centre established by Municipal Corporation of Delhi (MCD) on funds allotted by the World Bank could not run due to budgetary and staff constraints. MCD contracted out the health centre to a local NGO. Name of the health centre is Arpanan Swasthya Kendra, Delhi. It was targeted for urban slum settlement colony in one of location of city of Delhi (Draft Report on Recommendation of Task Force on Public Private Partnership for the 11th Plan). The cost of project is merely Rs. 35,000 per month and rent

free premises to NGO. The NGO working in the location sought to use the building for providing health and community services to the local slum population. NGO adopted and managed health centre for providing clinical services, lab tests, referrals for emergency services and maternal and child health services. Health outcomes improved, there was fall in IMR and MMR in the locality. The local people got to use better facility provided by the NGO in their area. People reported that they can now actually access services after paying nominal amount. This situation was good in a sense that previously there was no public provision of services and current facility is cheaper than private care facilities. Building once lying unutilized was converted into efficient health centre catering to the need of local people. The government was able to provide services after spending little amount. MoU was clear about performance measures although monitorable targets were not fixed. There was no clarity on user charges but residents reported that they are satisfied by the services provided by NGO at nominal costs. This was successful due to initiative taken by the NGO and financial assurance given by the government.

(III) Karnataka Integrated Telemedicine and Tele-Health Project

Karnataka Integrated Telemedicine and Tele-health Project is commissioned by Department of Health and Family Welfare, Government of Karnataka through district hospital and Indian Space Research Organization, Government of India. The location of the project is Chamrajnagar District Hospital, Karnataka. This is a joint venture between both the parties. Government paid for medicines and treatment for BPL and Yeshasvini cardholders. There was lack of specialist in providing health care services in the remote area. The project aimed to provide tele-diagnosis and

consultation services for coronary care. It also seeks to provide emergency diagnosis and treatment through video-conference from remote locations and also promote optimal deployment of resources, reduce clinical travel time, patient transfer, training and professional development of local physicians. Narayana Hrudayalaya, private partner in this project was keen in using the technology developed by ISRO for providing super specialty clinical services for the people in remote areas. There were free diagnostics, medicines and treatment for BPL patients and Yeshasvini cardholders. Other were charged nominal amount and thus poor people of this economically backward district comprised mainly of poor farmers were greatly benefitted. Use of technology by the private player and keenness of the government for providing specialist services to the poor was achieved. Technology coupled with financial support of the government helped in successful implementation of the project.

(IV) Assam Sector Investment Programme (SIP)

Government of Assam enter into a partnership arrangement with Marwari Maternity Hospital, a private, non-profit maternity and child trust hospital in Guwahati, to provide RCH services in identified low-income wards of the city, having a total population of about four lakh. The Agreement, executed in February, 2002 specified the mutual roles and responsibilities of the parties to the Agreement. Briefly, the State Government is providing financial assistance to the hospital for adding to its facilities in return for outreach and referral services that the hospital is to organize in the identified slum areas. The work started formally on 31 March, 2002 in five of the eight wards, with a population of about 2.5 lakhs. The hospital staff provides outreach services in the slum areas and cases needing more

attention are referred back to the hospital. Prior to implementation, extensive consultations were held with community and religious leaders, to secure their support and lower their opposition. The initiative is reported to have had significant successes in a relatively short period of time. Other private and trust hospitals in the city are expressing interest in joining this initiative. The Guwahati model is an example of successful public-private partnership, which needs little infrastructure, is cheap, and got off to a very quick start. Guwahati type contractual arrangements with existing service providers (i.e. hospitals) appear to be a more cost effective option where the contract is with reference to an identified area and an identified service package.

(V) Kurji Holy Family Hospital and Community Health Centre

Kurji Holy Family Hospital and Community Health Centre in Patna, Bihar is hired by district administration of Patna to provide reproductive and child health services to the people living in catchment area of the hospital. The contracting type of PPP is used for the project. The cost of project is Rs. 1.6 Crores. There was unacceptably high infant and maternal mortality and morbidity rate in the catchment area of the hospital. The purpose of PPP is to provide immunization and reproductive and child health services among the poor in the hospital's catchment area. The hospital claims to have reached 100 per cent immunization and antenatal care coverage. Although, there was no mechanism to cross check claims made by the hospital authority. However, coverage was high and at relatively low costs. The unreliability of Government commodities and the unpredictability of government policy was a major concern. The unwillingness of the Government to actively take part in the implementation of the project

discouraged private player. The Government only provided supply of consumables (not regular) and no subsidy or per capita contribution for serving its primary target group. The project was not successful due to various reasons including government apathy and lack of monitorable targets (Vinod B. Annigeri, et. al., 2004).

(VI) Janani Social Franchising Model, Bihar

Janani Social Franchising Model, Bihar is started in the state for low and middle income segments of the population throughout the State of Bihar. This initiative is running on social franchising, contracting in and contracting out mode under PPP. Government of Bihar is the sponsoring authority for this initiative. The cost of project is Rs. 160 million. One third of the deaths in Bihar are due to poor RCH and communicable diseases. Situation is worse for poor and middle income segment of the State. Under PPP, there was provision of establishing of three channel delivery system (shops, Titli Centers and Surya Clinics) for providing RCH services and general health services program. There are about 32,000 shops, 25,000 Titli Centers and 550 Surya Clinics spread across the state to cater the needs of the people. These provided services and products at subsidized costs. Although no evaluation was done, citing high costs as the main reason, it may be said that reach and coverage of the initiative is very high. Couple year of protection (CYP) data shows that the program accounts for 15 per cent of couples protected in Bihar & Jharkhand, or 1.1 million couples in the year 2001-02. These data are not population based surveys, and are unverified. The project is ambitious and aims to achieve the objective of providing RCH services at subsidised rate. The Government has limited role of providing condoms and oral contraceptives at discounted

price. There is no formal or informal agreement between Janani and the state government and also there is no coordinated planning or services. The entire operation is planned, implemented and monitored by Janani. The cost of the entire programme is very high and no proper evaluation mechanism is developed to understand the impact of the programme. The project is not so successful due to lack of detailed role of government and private players, no enthusiasm from the government and no procedural way to evaluate the results. It is very costly to implement in other parts of country (Vinod B. Annigeri, et. al., 2004).

(VII) Private Anaesthetists at First Referral Units and Primary Health Centres, Tamil Nadu

Tamil Nadu Public Health department hired private anaesthetists for 44 PHCs in the districts of Thanjavur, Thiruvarur, Nagappattinam, Dharmapuri, Krishnagiri, Madurai and Theni and selected 75 FRUs in 24 districts. The scheme is now extended to all the PHCs and government hospitals in the state except the medical college hospitals and urban municipal hospitals. The cost to the government is Rs. 1,100 which includes Rs. 100 for conveyance per case of caesarean or major gynaecological/obstetric surgery. An acute shortage of anaesthetists in the public health system meant that even if other facilities were available, operations could not be conducted. Under the Reproductive and Child Health (RCH) programme, the Medical Officers (MOs) at the First Referral Units (FRUs) and Primary Health Centres (PHCs) in Tamil Nadu were empowered to contract in private anaesthetists. On average, 12 per cent of the total number of Caesareans (around 2,500 Caesarean surgeries per year) was performed in the secondary level hospitals (FRUs) by hiring the services of private anaesthetists. During the last 4 years around 48,000 additional tubectomies were performed by

hiring private anaesthetists at FRUs and PHCs. 112 more PHC operation theatres were made functional. Local service improved, enables emergency obstetric surgeries to be conducted in FRUs without patients having to waste time and money on travel. Scheme reduced the unnecessary referral from one institution to another for want of anaesthetists. The scheme proved to be life-saving, reduced maternal deaths due to timely availability of anaesthetists. It was patient-friendly, enabled tubectomy surgery to be carried out at the PHC which most people prefer because of the 'family atmosphere'. Tamil Nadu Public Health department plans to continue the scheme under RCH2 and to extend it to the urban municipal corporation hospitals.

(VIII) Involvement of private sector in providing reproductive and child health services, Uttar Pradesh

State Innovations in Family Planning Services Project Agency (SIFPSA) involved private players to provide reproductive and child health services in 33 districts of Uttar Pradesh. The estimated cost for a typical two year project of one block comes to about Rs. 25-30 lakhs. SIFPSA funded by USAID, works with NGOs to provide family planning services to the rural areas of Uttar Pradesh. A Community-based Distribution (CBD) volunteers is trained at a training centre managed by SIFPSA. The CBD worker is a married woman from the village where she is to work. She looks after a population of 2,000 and her work includes: identifying and counting eligible couples, supplying condoms and pills, family planning counseling and referral for sterilization. She is given an honorarium of Rs. 600 per month and incentives based on the sale of condoms/pills. CBD volunteer are monitored by a network of supervisors. At the end of the quarter, a physical

progress report is sent to SIFPSA along with a quarterly expenditure report. Only then can money be released to the project. In addition to these internal evaluations, there are regular external evaluations. Extensions are based on the NGO's performance. As of January 2004, there were 76 ongoing projects. There are four types of projects under SIFPSA's private sector division: (i) Grassroots NGOs working at block level using CBD approach (ii) Dairy cooperatives in 13 districts, again following the CBD approach but restricted to the villages that fall on the milk route. (iii) The employer sector consisting of two components – the factory component where an employee of the factory called the 'factory health motivator' plays the role of the CBD worker on the factory premises and the community component where CBD volunteers work in the vicinity of the factory. (iv) Indian Systems of Medicine Practitioners (ISMPs) are trained as family planning counsellors. Though they are given supplies for distribution, unlike the CBD volunteers, the ISMPs are not given any honoraria. The scheme takes advantage of the private sector in providing RCH services to the masses. The scheme is community-friendly because the CBD workers are women from within the community or from other community-owned institutions such as the dairy co-operatives; they are accepted by the community. It lead to empowerment, enhances the confidence of rural, illiterate women who, once trained, often encourage others to do the same.

(IX) Chiranjeevi Yojana, Gujarat

Realizing the limitation of public health facilities in reaching out to the weaker section of the population, the Department of Health and Family Welfare, Gujarat, initiated a scheme involving private sector specialists in providing services related to safe delivery, primarily for socio economically

weaker sections. The Scheme, called the Chiranjeevi Scheme was launched on pilot basis in December 2005. To begin with, this scheme was made operational in five most underserved districts in the state namely Kutch, Banaskantha, Sarbarkantha, Panchamahar and Dahod. The major areas of these districts were remote with large tribal population. The beneficiaries under the scheme are the pregnant women from BPL families. As per MoU signed with all the private players, they have to provide the maternity services to the BPL/ tribal (non income-tax paying) mothers as beneficiaries of the scheme at their nursing homes/hospitals. The Obstetricians were paid Rs. 1,79,500/- for a package of 100 deliveries (@ Rs. 1795/- per delivery) in past. The package is revised to Rs 2,80,000 for 100 deliveries wide GR dated 17-8-2010. The package of 100 deliveries includes normal and complicated deliveries and also caesarean section operations. If the private gynaecologist offers his/ her services in the Government Hospital, then Rs. 86,500/- will be paid for every 100 deliveries (including normal and complicated). There is no limit on number of deliveries conducted by the doctor. The package also includes Rs. 200/- for transportation to the pregnant mother. ASHA will be paid separately Rs. 200 for bringing for institutional delivery separately from ASHA incentive fund. UNFPA Gujarat and Indian Institute of Management, Ahmadabad evaluated the scheme. Reports have encouraging remarks about the scheme. Government of Gujarat expanded the scheme in all the districts of the state from 8th September, 2006. The Scheme has been awarded Asia Innovation Award, and Prime Minister's Award, 2009. It is also cited in a UNICEF report: State of World's Children 2009 and in 'Countdown to 2015 – Decadal Report 2000-2010' by WHO and UNICEF in 2010.

Nine PPP projects in health discussed in previous section are summarized in the following table:

Table 5.2: PPP Projects in Health Sector

Name of Project	Type	Remarks
Urban Slum Health Centers, Andhra Pradesh	Contracted Out	Government was committed and funded the entire project. Community involvement was strong. Local advisory committee involves local stakeholders in selecting NGO and oversees management. There was heavy emphasis on performance and achievement of results. Government provided rigorous training program to NGOs.
Arpanan Swasthya Kendra, Delhi	Contracted Out	MoU was clear about performance measures although monitorable targets were not fixed. There was no clarity on user charges but residents were satisfied by the services provided by NGO at nominal costs. Initiative by NGO and financial assurance by the government proved to be success factor.
Karnataka Integrated Telemedicine and Tele-Health Project	Joint Venture	Use of technology by the private player. Government was committed for providing specialist services to the poor. Technology coupled with financial support of the government helped in successful implementation of the project.
Assam Sector Investment Programme (SIP)	Contract	Clear mention of the mutual roles and responsibilities of the parties to the Agreement. Extensive consultations were held with community and religious leaders. Government provided financial assistance.
Kurji Holy Family Hospital and Community Health Centre	Contract	The unreliability of Government commodities and the unpredictability of government policy was a major concern. The unwillingness of the Government discouraged private player. The Government provided only consumables

		(not regular) and no subsidy or per capita contribution. The project was not successful due to various reasons including government apathy and lack of monitorable targets.
Janani Social Franchising Model, Bihar	Social Franchising	The project is not successful due to lack of detailed role of government and private players, no enthusiasm from the government and no procedural way to evaluate the results. No formal or informal agreement. No coordinated planning or services. Entire operation managed by private player. Cost of the entire programme is very high and no proper evaluation mechanism is developed to understand the impact of the programme.
Private Anaesthetists at First Referral Units and Primary Health Centres, Tamil Nadu	Contract	Well defined costing and incentive to private party. It was patient-friendly. Suited to local conditions.
Involvement of private sector in providing reproductive and child health services, Uttar Pradesh	Contract	Good monitoring system. The scheme takes advantage of the private sector in providing RCH services to the masses. The scheme is community-friendly. It lead to empowerment, enhanced the confidence of rural, illiterate women.
Chiranjeevi Yojana, Gujarat	Contract	Incentive for private players. Early release of payments to private players. Well defined MoU. Commitment from Government. Efficiency of private players. The Scheme has been awarded Asia Innovation Award, and Prime Minister's Award, 2009. It is also cited in a UNICEF report: State of World's Children 2009 and in 'Countdown to 2015 – Decadal Report 2000-2010' by WHO and UNICEF in 2010.

The study of projects reveals that a well defined MoU and government commitment towards the project play defining role for the success of PPP projects. Most of the projects were in contract mode and private players were given incentive for performing well. The government made sure that private players get timely payment for their services. The government recognised the efficiency and expertise of private players. Government facilitated private players' service through their government existing infrastructure. Private players were given clear mandate and good monitoring system ensured implementation and operation of the project. Lack of interest by government cannot achieve the desired result as shown in PPP project at Kurji Hospital, Patna. Government has to work together with the private players on regular basis. Only contracting out a public service and not taking active part in the implementation and operation of the project will not yield desired result. Private players should be treated as partners and not the contractors. There is need to change the attitude of the government. On private players, there is need to understand that there will be less margin in providing the services but still they can make profit. The private players can play a major role in achieving the target of social inclusiveness in partnership with the government.

5.3 PPP in Water Supply & Sanitation

There are various PPP projects in water supply & sanitation in India (Annexure IV). Few selected projects in the field of water and sanitation is discusses below.

(I) Construction of Sewage Pumping Station & Treatment Plant, Alandur, Tamil Nadu

Alandur, a residential suburb of Chennai in Kanchipuram district with a population of 150,000 had no underground sewerage until 2000. Almost 80 per cent of households had to depend on septic tanks with soak pits. This has been accomplished over a period of five years with direct public participation. The project cost is Rs 34 crore and the financing was arranged as such that half the amount would come from the Government of India's programme, Jawaharlal Nehru National Urban Renewal Mission (JNNRUM), Rs 13.6 crore from the World Bank, and Rs 3.4 crore from residents' deposits (varying from Rs 1,000 to Rs 5,000 per household, depending on the ability to pay). In the event, residents contributed Rs 11.9 crore and only Rs 3 crore was drawn from the World Bank/ Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL). The Tamil Nadu Urban Local Bodies Act 1998 facilitated the process of financing and cost recovery. The project involved the construction of a sewer line covering the entire road length of 137 km, a pump house, 5650 manholes, and 23,700 house service connections. The project was contracted on BOT mode. The network construction contract was awarded to IVRCL, a private infrastructure company. Consulting Engineering Services (India) was appointed project management consultant. The major contributing factors to the success of the initiative were the dynamic leadership of a directly elected mayor of Alandur, the supportive role played by the municipal corporation, and the creation of an enabling environment by the Government of Tamil Nadu. Mobilizing peoples' participation for infrastructure projects is possible through the collective efforts and transparent proceedings. Inter-departmental coordination and involvement of stakeholders throughout the

project implementation assures the timely completion of the project. Concern of the stakeholders also provides strength and motivation to the implementing agency to overcome the problems that may occur during the project implementation. The urban landscape of Alandur transformed due to this project (India Best Practices Catalogue, 2003).

(II) Water Supply in Khandwa, Madhya Pradesh

Municipal Corporation, Khandwa with an aim to provide 24X7 water supply to its resident contracted a private player on BOT model. The cost of project was Rs. 106.72 crores. There was irregular supply of water and contamination in water leading to water borne diseases among the residents. The purpose of the project is to bring Narmada water at a distance of 52 km from the Choti Tawa River (back water of Indira Sagar Project near Charkhera village) through DIk9 pipe (750 mm diameter) to Khandwa. At Choti Tawa River, intake well, water treatment plant and electric sub-station is to be constructed. Ten overhead tanks to be constructed at Khandwa to ensure 24x7 water supply. After the implementation of project, clean and regular supply of water was achieved. Wastage of water was minimized. With the use of better managed private players, quality drinking water can be provided to public at competitive price. The government approach was correct and end results were clearly defined. These factors led to success of the project (www.pppinindia.com accessed on May 20, 2012).

(III) Public Conveniences in Bhopal

There were not sufficient public conveniences in the urban parts of Bhopal causing difficulties to the citizens. This led to the unhygienic conditions on streets. Bhopal Municipal Corporation (BMC), Bhopal invited private players to play a major role in providing these basic services to its residents.

All these public conveniences are located in urban parts of Bhopal. This project is an example of BOOT model. The cost of project is Rs. 2 crores. The main work involved in the project is to construct 36 toilets in 2 groups of 18 each over eight month time. User charges were market driven but use of urinals was free. Construction of public conveniences provided relief to the citizens and created better conditions on the streets. Cleanliness was improved. Handing over construction and management of public conveniences to private players ensured timely completion and better managed services to the people. Contract with private players was very clear with sufficient penalty clauses. Private players were given incentive in the form of tax free advertisement which can be displayed on the outer and inner wall of facility. Clear defined role and incentives to private players ensured the success of the project.

(IV) Tirupur Water Supply Project, Tamil Nadu

There was severe water crisis of water for the industries working in Tirupur. This town is India's largest producer of cotton knitwear with over 2,500 textile businesses located within 25 mile radius. Water is essential for the survival of these industries. Due to use of chemical dyes, groundwater and other surface water bodies were highly contaminated and unfit for consumption. The sanitation facility was not good keeping in mind the high concentration level of population. Tirupur Exporters Association in association with Tamil Nadu Corporation for Industrial Infrastructure Development, Government of Tamil Nadu strated a PPP on BOOT model named Tirupur Water Supply Project. Cost of project is Rs. 1,023 crores. This PPP was responsible for all the water and sanitation facility of Tirupur. The project included collection, treatment, transmission and distribution of

water to households, industries and the municipality. The primary purpose of the project is to address the water needs of the industrial area in Tirupur. It is planned to provide low-cost sanitation facility in 100 slums of the town. The supply of water under this PPP was inadequate. Village panchayats are provided water only once in 15 days. The residents complained of poor quality of water being supplied. There was no improvement in the facility for treating waste water. The industries which polluted the water bodies over the years were given priority in designing water supply scheme. There was no concerted effort to ensure recycling of waste water and zero effluents discharge. The current structure discourages water recycling efforts on part of industries. There were serious flaw in the project undermining environment, sustainability and equitable distribution of water. The project represents a classic case of reductionist engineering, sidelining sustainable water use planning and conservation efforts (Roopa Madhav, 2008).

(V) Chandrapur Water Project, Maharashtra

There were huge water losses in the district. The water losses were to the tune of Rs. 1.83 crores. There were 56 leakages to main water supply line. The water supply system had low pump efficiency. Water tax collection was very low and there was high number of complaints by the existing users. Chandrapur Municipal Corporation started PPP on contract basis to a private player to improve the situation. The cost of project was Rs. 3 crores. PPP achieved some desired result as there was reduction in leakages through technological solution. Preventive maintenance was initiated by using oil lubrication system of pumps. Streamlining of water tax collection system with recovery percentage of water tax improved from 60 per cent to 95 per cent. Per capita supply of water increased from 70 lpcd to 130 lpcd.

Number of complaints reduced from 100 to 10. Breakdown time reduced substantially. New water connection was provided to 3,000 additional households since 2004. This PPP was successful in a sense that that even where the private company was not required to expand coverage (in a year), consumers started coming to the private player on their own with offers to fund the cost of laying distribution pipelines themselves if the private party would distribute water to them also. There was increase in understanding among the public as well as municipal staff regarding the need for private operation of utilities. PPP concept proved to be as good as theoretically as well as in practical sense. The adaptability and consumer's interest and willingness to pay little higher price for better facility was noteworthy. There was capacity development of municipal staff as well (Position Paper on Water and Sanitation Sector in India, GoI, 2009).

(VI) Latur Water Supply Project, Latur, Maharashtra

The problem in water supply facility in Latur included inequitable water supply, poor demand coverage (twice per week covering 80% of population), poor asset maintenance, poor management of water supply account, lack of meters, many illegal connections, lack of customer services and complaint redressal system. To address these issues, RFP was invited from pre-qualified bidders in April, 2007. A SPV named Latur Water Management Company was created to implement the scheme. The bidding criteria includes premium paid by operator over 10 years for use of the assets. The private players were assigned task of operations & maintenance of water works, bulk supply and distribution networks, manage new connections including collection of applications, connection charges, manage regularisation of illegal connections and impose penalties, etc. The

private player had to implement Hydraulic Modelling and integrated MIS, invests in metering, billing and collections for 10 years, develop customer information system including 24x7 call centre. Special concessions offered to slums, unmetered connections and social functions. The benefits of this project included 24x7 availability of quality water within 2 years (> 100 lpcd), increased coverage and 100 per cent metering, regularizing illegal connections, etc. This model was financially viable business model through enhanced operational efficiency. The project reduced losses and imposed optimal tariff structure. The project is successful in addressing the issues related to water supply in Latur (Position Paper on Water and Sanitation Sector in India, Govt. of India, 2009).

(VII) Karnataka Urban Water Sector Improvement Project (KUWASIP) at Belgaum, Gulbarga & Hubli-Dharwad

The Government of Karnataka, with assistance from the World Bank, launched the Karnataka Urban Water Sector Improvement Project (KUWASIP) in 2005 in five selected zones in three cities (Belgaum, Gulbarga, and the twin cities of Hubli-Dharwad) to build and deliver an efficient and commercially viable 24x7 urban water supply system through PPP. The project was a performance based contract with private sector firm for rehabilitation, operation and management of water service. Single contract for all three ULBs was given to private operator. Private operator was assigned the task of construct-operate-manage 24x7 urban water supply systems for two years, after a preparatory phase of 18 months. The management fee of Rs 22 crore to the private operator had a fixed component of 60 per cent, while the remaining 40 per cent was linked to performance. The contract also included bonus as well as penalty of up to 10 per cent in case of failure to meet the performance targets. The

investment was made by the Karnataka Urban Water Supply and Drainage Board (KUWSDB) while the private operator was responsible for installation of meters, tariff collection, etc. The tariff structure was rationalised by introducing variable rates based on consumption. A proactive communications strategy involving all stakeholders at local level was rolled out to seek buy-in for the project. Losses were reduced from 50 per cent to 7 per cent due to improvements in the transmission and distribution network, and improved metering. Over 25,000 households now receive 24x7 water supply. Significant reforms were carried out in public sector institutions such as the KUWSDB, and the Karnataka Urban Infrastructure Development and Finance Corporation. In August, 2009 the project was conferred the first prize in the PPP category of the National Urban Water Awards of the Ministry of Urban Development, Government of India (Position Paper on Water and Sanitation Sector in India, Govt. of India, 2009).

(VII) Nagpur Water Supply, Maharashtra

The city of Nagpur was facing problem in operations and distribution in water supply to its residents. There were water losses, inequitable distribution (alternate day/ 20 hrs/ day), inefficient system water system to slums, inadequacy of network, old and inefficient assets, lack of capital, low water tariff and poor billing mechanism. There was lack of professional approach in water supply system. To address these issues, Nagpur launched a series of initiatives towards an integrated development of its water sector including a continuous water supply project for ten per cent of its population. Nagpur Municipal Corporation (NMC) set up a dedicated company for overseeing its water provision and waste water treatment and

disposal functions. NMC contracted a private company to improve the water supply system in the city. The feature of this project includes 15,000 connection including ten slum areas covering a population of 1.5 - 1.75 lakhs person. The contract was based on study, rehabilitate, and operate basis. There was provision of penalty/ bonus for targets in quality, customer services and continuity of supply. The rehabilitation plan includes replacement of all house service connection & Meters, replacement of old conservancy GI pipe, rehabilitation of tertiary network and hydraulic modeling as per master plan. The services sought from the private players included installation of new billing system and customer facility centre. Based on good results thus far, proposal for entire city supply under PPP is mooted. A performance-based contract for 25 years is started. There is proposal to collect full user charges for assets created under JNNURM. Estimated cost of entire project is Rs. 6.5 billion. NMC has received Rs. 615 crores under JnNURM sanctions for water supply expansion. NMC will apply for Rs. 350 crores JNNURM grant for rehabilitation of distribution network. Asset ownership is with NMC. Exclusive rights of operating water supply services, including collection of water charges are assigned to concessionaire on behalf of NMC. All operational risk is with the operator. In turn, concessionaire will retain fee in proportion of water quantum supplied & sold. User charges will depend on performance-related factors such as limiting physical & commercial losses below certain levels and ensuring adequate collection efficiency. To monitor the project, regulator is in place to ensure consumers receive expected service level at reasonable cost, protect short term and long term interests of consumers and provide certainty for public and private investment. Regulator will also help in enhancing accountability and transparency and to control the financial

performance. There was political resistance to raising water tariff in Nagpur. But, finally a compromise solution was found with some increase but not the whole amount in tariff. In Nagpur a better supply situation is accompanied by considerable improvement in the revenue generated from water supply. This is a case of partnership rather than privatisation. The current initiative involved a number of governance reforms and tariff increases, and the private sector brought in efficiency gains (Position Paper on Water and Sanitation Sector in India, Govt. of India, 2009).

(VIII) Water & Sewerage Networks, Salt Lake, Kolkata

A PPP for development & management of water & sewerage networks for Salt Lake Sector-V at Kolkata on 30 year BOT basis was started in Kolkata, West Bengal. The funding pattern of the project is shared as 65 per cent by private player and 35 per cent is contributed by fund under JnNURM. Project value is Rs. 260.7 million for water supply and Rs. 340.7 million for sewerage system. Developer to purchase bulk water from Kolkata Municipal Corporation @ Rs.5/ KL and bill consumers a combined 'water-cum-sewage' charge based on volumetric tariff. Any revision in bulk water supply charge by KMC will be passed on to consumers. Developer will retain 'water-cum-sewage' connection charge. There is provision of 10 per cent escalation on tariff every five years. Tariff is set at Rs. 25 per kL. A new metering policy was introduced. The project includes minimum monthly charge equivalent to 50 per cent of demand charges. New rule prohibited withdrawal of ground water by existing consumers. The project includes construction of 3 MGD Clear water pumping station, 8 MLD STP, 2.25 ML capacity ESR, 500 mm dia. DI K9 of 3.2 KM, 150 mm to 700 mm dia. Sewerage Network of RCC Hume pipe class NP3 of 14.43 KM with IPS, Installation of bulk & consumer meter, O&M of entire utilities, Billing

and collection for 30 year concession period (Position Paper on Water and Sanitation Sector in India, Govt. of India, 2009).

(IX) 24x7 Water Supply Project in Mysore city, Karnataka

Largest water supply PPP project in India based on performance based management contract was started in the city of Mysore. This is the first city-wide water distribution management contract (O & M Billing & Collection, Customer Support Systems). The project will cater to the need of million plus population. There is only one operator for the entire city for optimized & effective solution. The funding pattern is JNNURM (80 per cent), Government of Karnataka (10 per cent) and Mysore City Corporation (10 per cent). The contract is a six year tripartite contract between Karnataka Water Supply & Drainage Board (KUWSDB), Mysore City Corporation (MCC); and JUSCO (private player). Contract period comprise of three phases: Phase I is Preparatory phase (12 months), phase II is Rehabilitation phase for 36 months and phase III includes maintenance phase for 24 months. Key contractual clauses include bulk water supply commitment, quality of water, discussion policy and dispute resolution mechanism. Management fees and operating costs are paid in two parts. The rehabilitation cost is BOQ driven based on capital investment plan (CIP) payable against invoice for completed works not less than Rs. 10 lakhs. The target for operator includes number of connections with 24x7 should increase by 30 per cent, revenue improvement – 30 per cent, revenue water in 24x7 area – 10 per cent, resolution of complaints on service in 24x7 area – 10 per cent, etc. This project is running successfully and can be replicated in other cities and towns (Position Paper on Water and Sanitation Sector in India, Govt. of India, 2009).

The PPP projects discussed above are summarized in Table 5.3.

Table 5.3: PPP Projects in Water Supply and Sanitation

Name of Project	Type	Remarks
Construction of Sewage Pumping Station & Treatment Plant, Alandur, Tamil Nadu	Collaboration	Dynamic leadership of elected mayor of Alandur, the supportive role played by the municipal corporation, and the creation of an enabling environment by the Government of Tamil Nadu are success factors. Peoples' participation for infrastructure projects is possible through the collective efforts and transparent proceedings. People funded part of project. Inter-departmental coordination and involvement of stakeholders throughout the project implementation assured the timely completion of the project.
Water Supply in Khandwa, Madhya Pradesh	BOT	Use of better managed private players, quality drinking water supply achieved at competitive price. The government approach was correct and end results were clearly defined.
Public Conveniences in Bhopal	BOOT	Construction and management of public conveniences to private players ensured timely completion and better managed services to the people. Contract was very clear with sufficient penalty clauses. Private players were given incentive in the form of tax free advertisement which can be displayed on the outer and inner wall of facility. Clear defined role and incentives to private players ensured the success of the project.

Tirupur Water Supply Project, Tamil Nadu	BOOT	The supply of water under this PPP was inadequate. Village panchayats are provided water only once in 15 days. The residents complained of poor quality of water being supplied. There was no improvement in the facility for treating waste water. There was no concerted effort to ensure recycling of waste water and zero effluents discharge. The current structure discourages water recycling efforts on part of industries. There were serious flaw in the project undermining environment, sustainability and equitable distribution of water. The project represents a classic case of reductionist engineering, sidelining sustainable water use planning and conservation efforts.
Chandrapur Water Project, Maharashtra	Contract	The adaptability and consumer's interest and willingness to pay little higher price for better facility was noteworthy. There was capacity development of municipal staff as well.
Latur Water Supply Project, Latur, Maharashtra	Lease	This model was financially viable business model through enhanced operational efficiency. The project reduced losses and imposed optimal tariff structure. People are ready to pay higher prices for better services.

<p>Karnataka Urban Water Sector Improvement Project (KUWASIP) at Belgaum, Gulbarga & Hubli-Dharwad</p>	<p>Performance based Contract</p>	<p>The contract included bonus as well as penalty in case of failure to meet the performance targets. The tariff structure was rationalized. A proactive communications strategy involving all stakeholders at local level was critical. Significant reforms were carried out in public sector institutions. In August, 2009 the project was conferred the first prize in the PPP category of the National Urban Water Awards of the Ministry of Urban Development, Government of India.</p>
<p>Nagpur Water Supply, Maharashtra</p>	<p>Contract</p>	<p>Provision of penalty/ bonus for targets in quality, customer services and continuity of supply. Collection of full user charges for assets created under JNNURM. All operational risk is with the operator. In turn, concessionaire will retain fee in proportion of water quantum supplied & sold. User charges will depend on performance-related factors such as limiting physical & commercial losses below certain levels and ensuring adequate collection efficiency. To monitor the project, regulator is in place to ensure consumers receive expected service level at reasonable cost, Little increase in tariff. Considerable improvement in the revenue generated from water supply. The current initiative involved a number of governance reforms and tariff increases, and the private sector brought in efficiency gains.</p>

Water & Sewerage Networks, Salt Lake, Kolkata	BOT	Combined water-cum-sewage charge based on volumetric tariff. Any revision in bulk water supply will be passed on to consumers. Developer will retain 'water-cum-sewage' connection charge. There is provision of 10 per cent escalation on tariff every five years. A new metering policy was introduced. New rule prohibited withdrawal of ground water by existing consumers.
24x7 Water Supply Project in Mysore city, Karnataka	Performance based Management Contract	Key contractual clauses include bulk water supply commitment, quality of water, discussion policy and dispute resolution mechanism. Management fees and operating costs are paid in two parts. Performance target were well defined. First ever city-wide water distribution management contract (O & M Billing & Collection, Customer Support Systems) in India.

Study of PPP projects started in water supply and sanitation sector provides useful insight for understanding the processes and key factors which may influence the outcome of the project. Type of a contract agreement between both private and public entity is not of much importance in predicting the fate of the project. Rather the commitment and level of involvement by the political class and the governance structure has a defining role for the success of the project. Citizens support and participation right from the beginning of the project plays a crucial role in achieving the target set under the project. Changes brought in governance and creating an enabling environment by the government is fundamental to the success of the project. State government introduced reforms of created special purpose vehicle to achieve the end result as envisioned in the project

document. Rationalizing the tariff structure, revising user charges increased revenue for the developer to meet its operations and maintenance charges. Readiness of beneficiaries to pay higher charges for better service is crucial for the project. Also, use of better technology proved to be efficient in meeting the expected outcome from the project. The clear identification of monitoring and evaluation indicators and role of a regulator to keep a check on service provider for is one of the factors which helped in achieving the targets mentioned in the project.

5.4 Failed PPP Projects

The case studies discussed in above have shown that public-private partnerships entered into hastily can pose many challenges to governments. PPPs are complex, and they will continue to be fraught with problems unless governments learn from the failures of privatization, tendering systems, and past relations between business and government. The rationale behind studying a PPP projects in previous section, was to understand the reasons/factors which may lead to success or failure of the project. There are many PPP projects which were started in initial days and have since failed. There are instances where state governments such as Punjab, Rajasthan, Delhi, Tamil Nadu, etc. offered land at subsidized prices for setting up hospitals in mostly urban areas to private promoters. These initiatives failed due to many reasons like lack of detailed policy documents with accompanying procedures, protocols, regulations, incentives and mechanisms to support partnerships. There was lack of capacity and orientation of government functionaries to promote such partnerships. And there were instances of proxy litigation by interested groups blocking progress and inadequate legal safeguards and professional assistance to seek legal redress. Lack of single

window clearance facilities within the government for various statutory requirements that the private partners need before investment and Implementation contributed to the failure of PPP projects. In Bangalore and Hyderabad, private players were invited for supplying bulk water. Private players were responsible for investment, design, construction and operations and management. The project was abandoned due to reasons like bulk water tariff was unaffordable and project generated controversy. Similarly, water supply projects were abandoned in the city of Pune, Goa and Sangli. Main reasons cited for failure includes high political opposition to the project, high bulk water tariff, viability of the project, need of the project and lack of project preparation. These examples call for cautious decision while going for a PPP project. In the next section of the chapter, key lessons and guiding principles are discussed in detail so that same mistakes are not committed in new PPP projects to be started in the state of Bihar or any other place of the country.

Section II

This section starts with discussion held with various stakeholders. The discussion was held to seek their opinion on different aspects of a PPP project and explore the potential of PPP in Bihar. Primary data was collected for the purpose. Next part of the section provides key lessons and guiding principle drawn on the basis of discussion with stakeholders and case study analysis. These issues have significant bearing on success or failure of a PPP. Finally, avenues for new PPP in each of the three sectors under study which can be emulated in the state of Bihar are presented.

5.5 Views of Stakeholders on PPP

Personal interviews (PI) and focused group discussion (FGD) was used to seek opinion of various stakeholders involved or interested in PPP in different capacity. These stakeholders include government officials, representatives of private companies involved in PPP projects and local politicians. Also, casual discussion was held with number of people on the topic. The objective of this exercise was to gather information on different aspects of a PPP project and to identify the scope of PPP in Bihar.

In discussion with government officials, various crucial factors were raised. It was highlighted that the government officials involved in PPP projects lack expertise in dealing with these kinds of projects. The knowledge and exposure of government officials about PPP and that of private players is entirely different. There is lack of capacity in government officials due to which they are not able to negotiate a better deal with the private players. Private players are profit-oriented, so clauses should be made in agreement so that the objective of providing services to the citizens does not get defeated. Due to technicalities involved in PPP projects, government officials expressed that they are not able to negotiate better deal with the private players. All these issues have created a sense of negativity towards PPPs. However, they expressed willingness to start more PPP projects in the state. There is an urgent need to run training programmes or consultations for capacity building of government officials. It was suggested by government officials that there should be educational tour to operational PPP projects in other parts of country. An effective capacity building programme is necessary to generate interests among government officials about PPP and start and run a successful PPP project.

In order to explore the potential of PPP in Bihar, interviews were conducted with the representative of private players running PPP project. The objective was to know their willingness to work in Bihar and find out the reasons for low volume of PPP in Bihar. It was found that private players are interested to work in Bihar but they complained that the process of starting a PPP project has not yet been streamlined in the state. The process of identifying the avenues for PPP is not established. The benefits of PPP are not yet fully understood by government officials. The PPP can be initiated only if the government is interested and have the capacity to visualize how to and how much to gain from a PPP project. Private players stressed that the attitude of government officials towards a private player should be changed. They should be treated as a partner and not as a contractor. This change in perception can only ensure active participation of both public and private parties and thus lead to success of a PPP project. It was mentioned that the existing infrastructure in Bihar is below satisfactory level and thus there is huge scope of PPP in the state. It was highlighted that since level of urbanization is low in Bihar, establishing a PPP project would be rather easy than a city where is high urban sprawl as seen in other parts of the country. It was said that the allocation of fund for social sector in general is very low in the state so to complement this fund crunch, there is an urgent need to involve private players. Private players expressed that if a PPP project is suitably planned and there are safeguards for the private players, they would be willing to invest in Bihar. It is up to the government how to effectively use the expertise, resources and fund of the private players.

A discussion with politicians was necessary to get their views on the subject matter as successful PPP projects have clearly highlighted the active

participation of politicians in PPP project. Politicians expressed apprehension about the involving a private players as they are considered as profit oriented entity only. It was highlighted that private players will not deliver the services in efficient manner unless there is sufficient profit margin and these are being the social sector, profitability may be less due to number of reasons. They also expressed that there will be resistance from public in paying higher money for availing these services. The local politicians opined that there is need to hold workshops or public meeting to discuss PPP projects and its related benefits and costs. There is need to build consensus among politicians as well as public. The politicians should be taken into confidence before embarking on such kind of project. A discussion with general public was held to seek their opinion on PPP projects. It was highlighted that they are not well informed that PPP projects and its likely outcomes. But, they said that they are willing to pay little higher if better services are provided to them. The willingness to pay for improved water supply and sanitation was found to be higher in people residing in localities which are deficient of services like slums and congested areas. They have to pay higher price for these services in terms if loss of time standing in queue to get this services otherwise they have used their time in productive employment activities. People residing in better locality having own bore bells and capacity to avail these services on some payment did not show much interest in PPP projects in water supply and sanitation.

5.6 Factors responsible for successful PPP

Case study analysis and discussion with key stakeholders highlighted various key issues pertaining to PPP project. It was found that the sheer diversity of public-private partnerships suggests that there is no standardized

model available for wholesale mass replication. Instead, care should be given to learn about effective processes of partnership formulation and the essential ingredients for good partnership governance and management. Based on the analysis of PPP projects across country and discussion with stakeholders, common factors which were responsible for the success of a PPP project is outlined below.

5.6.1 Memoranda of Understanding

This is a starting point for initiating an implementation of a successful or failed PPP projects. The contract between public and private partners should be clear and acceptable to both the parties. All fine details should be captured in the MoU. It should be ensured that the bidding process is competitive and adheres to proper procurement procedures. It is crucial that the final bid is the best and acceptable to all the stakeholders. More generally, for PPPs to succeed, it is important to have tender documentation with well-structured requests for proposals and draft contracts ensuring a fair and balanced relationship with clear and realistic risk allocation. Public sector agencies should evaluate their contract tendering procedures with an eye toward facilitating PPPs. Inadequate project formulation and the improper management of the projects may be the primary reasons for project failures (Chitkara, 1998). New ways need to be found to use the procurement process to create incentives for innovation by private sector contractors in designing and implementing solutions that reach the poorest. Private sector organizations have opportunities to contribute towards the planning and implementation of policy as part of such interactions and consultation. During MoU process, potential partners may suggest innovations which reduce overall costs and improve efficiency.

5.6.2 Pricing of Services

The viability of PPPs is deeply affected by the pricing mechanism of service to be provided. Many governments turn to PPPs when they cannot afford to continue to provide free or expensive services. While private players can bring efficiency and needed investment, it cannot work miracles. Allowing companies to raise prices rapidly on formerly cheap public services can spark a political storm. But ignoring market forces and suppressing price hikes entirely can force businesses to back out of PPP deals. Managing the transition from an era of state-subsidised service to more market-based pricing is critical. Case study in water supply project revealed that rationalizing tariff structure is a key to providing better services to the consumers. There should be adequate incentives both for the government and for the constructor and operator to remain in projects rather than walk away. A PPP must provide enough incentives for the partners to get involved in the project. Normally, the incentives are high because governments do not want to cancel the project due to substantial payments, which are often required in compensation for breach the contract and also due to the concern about public service continuity, while for constructors and operators the incentives would be the huge sunk investment in assets and thus they may be willing to accept some changes in contractual terms.

5.6.3 Symmetry of Information

Symmetric information between public and private sectors is a key element in formation of a successful PPP. Failures of PPP contract worldwide are mostly attributed to the agency problem (Schjelderup, 1990), arising under conditions of incomplete and asymmetric information when a principal hires an agent. The application of agency theory in a PPP contract is that the public sector is a principal and the private sector is an agent. Under the

assumption that both are utility maximisers, public and private sectors are likely to have different goals. The government would like to ensure social welfare and provide public with qualified services as high as possible. The private actors face the temptation to maximize profits as much as they can. In this partnership, governments are at a disadvantage because they are unable to examine the expertise provided by project constructors and operators. Therefore, governments seek to manipulate and mould the behaviour of constructors and operators so that they will behave in the way that is consistent with governments' interests and preferences (Waterman and Meier, 1998). There is need to bring change in the attitude of both the parties. Government should look at private players as partner rather than a contractor, whereas, a private players should be ready to forgo little profit for the benefit of the society at large.

5.6.4 Risk Transfer/ Risk Management

The government sometimes tends to put more risky component of a PPP on the private players. But, the distribution of risks should be distributed in a manner that the best person gets the appropriate responsibility. Some risks should be retained within the public sector or shared with the private sector (Bing et al., 2005). A high risk can discourage private players to get involved in a PPP. Appropriate transfer of risks is important for the success of a PPP contract because one major attribute of PPP is the opportunity to share risks between public and private sectors. It is imperative that risks are allocated in a best possible manner. There is need for an organisational arrangement with clearly defined responsibilities and roles for departments and individuals. Both parties must accept that the transaction is not a

purchaser-supplier contract but a partnership in which there is a sharing of risks and responsibilities.

5.6.5 Monitoring and Evaluation Mechanism

To understand the impact of a PPP in delivering services, a well defined and achievable M&E performance measures should be in place. The government and the private players should actively work in collaboration to keep an eye on the progress of the PPP project. Involvement of local people should be encouraged for better results. Establishment of a transparent and accountable regulatory framework is necessary for the private sector participation in a PPP (Jamali, 2004). From a public sector perspective, such a regulatory framework is crucial because PPPs generally need a direct organizational and control relationship between public and private to ensure that the partnership operates effectively and efficiently in optimizing the resources available to them in line with the broader policy objectives.

5.6.6 Political Issues

Government and the private sector often underestimate the extent and effect of political opposition to PPP initiatives. Conversely, every stakeholder should be taken into confidence and governments should work hard to explain the need for PPPs and publicly discuss options well before deals are signed. Tam and Leung (1999) found that political risks were the most difficult to handle in comparison with financial risks, while technical risks were the easiest to handle, even on projects incorporating innovative technologies. A stable political environment is favorable for PPP projects because the outcome of a project is dependent on generic policies (Flyvbjerg, 2003). For instance, in Alandur PPP model, local leadership played a major role in convincing the community members which proved to be a critical factor in achieving the desired result from the project. A

supportive political environment is necessary condition to realize the objectives of the project. Strong emphasis is laid on the importance of building sufficient political will and public support to overcome concerns over private sector involvement in the provision of public goods

5.6.7 Legal, Policy and Institutional Framework

The legislative framework has to be streamlined to ensure that PPPs are effectively implemented over the long run. A sound legislative and regulatory framework is needed for PPPs to succeed. Governments need to bring necessary reforms in the governance set up to create an enabling environment for projects. There is a need to evaluate existing legislature to ensure that it has the appropriate corporate and commercial laws in place to support private investment. In many cases discussed above, the government carried out necessary reforms in through legal, policy and institutional framework before starting the process of partnership with the private players. There is a need of a dedicated task force, advisory board, and/or a project management office close to the decision-making authority. Competencies that improve the quality and sustainability of service delivery and facilitate the organizational changes is required to reform wider public-sector delivery systems and their institutions. A weak public institution is unlikely to succeed in achieving developmental outcomes that are sustainable. The need for a consistent policies and legal systems that support long-term engagement by the private sector is a key to the success and scaling up of PPPs.

5.6.8 Capacity

Capacity is a serious constraint for governments and private players as well to conduct successful partnerships. Both stakeholders need to develop their capacity to plan, negotiate, implement and monitor successful PPP projects.

While the argument can be made that PPPs are too complex for governments lacking adequate capacity, starting with smaller projects and developing such capacity gradually will help to overcome this problem. Establishing dedicated PPP units in government as knowledge centres and using this to drive service innovation is essential. However, functions (or analysis, evaluation, administration and oversight of PPPs) should be clearly separated even within this unit to avoid a situation where the unit sees its main job as boosting PPPs (Vinning and Boardman, 2008). Lot of activities should be directed towards strengthening the capacity of public service institutions and delivery systems. Government officials and politician clearly mentioned that there is need to hold workshops or seminar to disseminate the idea of PPP and build capacities of all the persons involved in PPP process.

5.7 Impact of PPP on social sector outcomes: A Discussion

A critical examination of various case studies and discussion with key stakeholders carried out in earlier part of section revealed that a well prepared and efficiently managed PPP project have positive impact on social sector outcomes. PPP project in the field of education started in Andhra Pradesh, Punjab and Rajasthan showed that a PPP project can help improve attendance rate of students, increase enrolment ratio and enhance capacity of the school. Health PPP projects in Andhra Pradesh, Karnataka, Assam and Gujarat improved health outcomes. There was considerable improvement in access to health facilities and people at large were greatly benefited. PPP in Tamil Nadu catered to local people and was patient friendly. In case of water supply and sanitation there was remarkable improvement in services with low breakdowns and improvement in quality of water supplied and

enhanced cleanliness level. PPP projects have combined the skills, expertise and experience of both the public and private sectors in a better way. These combinations of skills undoubtedly delivered higher standards of services to customers or citizens. The public sector hope to provide better governance, policy support and also takes care of social, environmental and political risks. And, the private sector brings operational efficiency, innovative technologies, managerial effectiveness, access to additional finances, and construction and commercial risk sharing. PPP projects, thus, ensure efficient use of resources, whether public or private. Empirical evidence also proved that involvement of private players have resulted into improved health outcomes, better education attainment and improved water & sanitation facilities. Thus, first hypothesis as stated in the research methodology section holds true.

Second hypothesis of the research asserts that PPP helps in improving the delivery of social services in efficient and timely manner. It is evident that one of the reasons for a success of a PPP projects is close monitoring and meeting the deadlines. There was a clause of penalising a private player if there is a delay in implementing the projects. It not only ensured the timely completion of project but also kept cost of project at lower side. There were no cost overruns due to delay. PPP projects completed on time started delivering services in efficient and timely manner. The objective of providing services to the people in better manner was achieved. Hence, a PPP helped in improving the delivery of social services in efficient and timely manner. Thus, it can be asserted that second hypothesis also holds true i.e. PPP helps in improving the delivery of social services in efficient and timely manner.

5.8 Potential for PPP in Bihar

The analysis of PPP projects across three sectors namely education, health and water & sanitation throws light on various aspects of PPP initiatives. From the analysis of these examples, it is evident that there is no proven formula which can guarantee the success of a PPP project. Each PPP should be defined, modeled and operated separately depending largely upon the local conditions and requirements. A state like Bihar is characterized by a huge diversity of demand requirements, supply constraints, regulatory frameworks, political realities, and levels of private sector participation. This fits with the ever-widening definition of a public private partnership from large-scale concession contracts involving private sector finance, to smaller scale service arrangements involving multiple parties from the for-profit and/or not-for-profit sectors. The complexities involved with PPP suggest that it would be unwise to seek to replicate model PPP arrangements which are successful in other parts of the country. However, based on the case study and experience regarding the key success factors and obstacles to formulating robust and well-governed PPPs, potential area for starting a PPP model is discussed in the following section. The PPP projects spreading throughout the country has provided useful lessons which should be taken into consideration while devising a PPP project in Bihar.

5.8.1 Education

There are large gaps in demand and supply of quality education across all level of education viz. primary, secondary, higher and technical education in the state of Bihar. State government is unable to fill this gap due to constraints on budget and capacity. PPP may emerge as a viable alternative to improve access to quality education while ensuring equity and social

justice. The inherent management structures in private schools ensure accountability of teachers as compared to government schools. There is an urge among, even in low income families, to make their best effort to send children to private schools by paying a much higher fee as compared to government schools which have nominal or no fee. In absence of government infrastructure and lack of quality education, private schools have stepped in to alleviate this situation, but those in rural and interior areas badly lack in quality. Private sector will be able to enhance efficiency in these areas and can bring professionalism into the system. By suitable government support, private sector can be involved to generate healthy competition among many private parties which is beneficial for all the stakeholders. Thus, PPP can be seen as arrangement wherein government school system can be augmented in a big way. Private players can be roped in to provide following type of services under PPP:

(i) Infrastructure Maintenance and Creation (design, build and maintain school building)

Due to shortage of fund, new infrastructure within the existing government school or new proposed school is hard to develop. The infrastructure may be develop and maintained through PPP project. This PPP may make provision of physical infrastructure. On a land belonging to government, a private partner may be invited through competitive bidding to construct school building along with associated facilities like electricity, water, sewage, etc. The private sector will arrange funds for the same and would maintain the infrastructure during the contract period, usually 20 to 30 years. The annuity payment will be made by the government on regular basis based on certification by an independent agency about achievement of performance standards. These standards could relate to the state of

availability and quality of maintenance of physical infrastructure. Deductions and penalties would be applicable in case of non-availability of any component of infrastructure or services which are to be provided under contract. The payment will be made only after the physical infrastructure is completely ready and made available within the stipulated time. The government by not specifying the type of design of the school but only its requirements can give opportunity to private players to propose innovative designs and lay-out plans. This would also enable appropriate schools to be built depending upon each geographical location and context. Under this model, the private partner has the responsibility only for providing building infrastructure and its maintenance and has no role to play in providing educational services. These schools are government schools except for the fact that the schools are not built by government agencies nor are government fund used for construction at the initial stage.

(ii) Operation and Management of Public Schools (with the existing staff and facilities)

Many government schools are located in prime locations, but are not managed properly. They are running with run down infrastructure and shortage of adequate staff. Such schools can be revived and capacity can be enhanced through PPP. Private partners may be selected through competitive bidding to take up addition to or refurbishment of the infrastructure of the schools. Government school structure and staff will continue to work in the same school. The private sector will be involved in activities like regular training of existing teachers and provision of additional teachers in life skill areas which are generally not provided under the government system. The private partner would also maintain the infrastructure during the contract period. In lieu of that, the private partner

would be allowed to use the school premises after school hours for running skill development centres using their own business models. They would also be permitted to construct new floors or new building blocks for use by the school during school hours and for its own use after school hours to run skill development centres and community colleges. The private partner would also be involved in the school management committee to chalk out and implement a blue print for overall improvement of the school. Private players will also be allowed to run a regular school in the second shift in the same premises.

(iii) Non-educational Support Services (catering, transportation, IT facility, library and extra-curricular activities)

A private player can be invited to provide non-educational and support services. It may be possible to create PPP structure to provide mid day meals, running of transport services, computer facility, maintain library and extra-curricular activities. The private players who have proven track record of providing these services can be hired. This will involve those private players who have expertise in delivering these services. This would help in the emergence of core competence in the private sector for these services. Also, competition among private partners will bring down cost and improve efficiency. Similar arrangements can also be made for training of teachers through reputed private agencies. Provision of IT services in this manner is now quite common among government schools in the country and this concept can be replicated for several other support services.

5.8.2 Health

Government of Bihar do not have the necessary funds to invest in infrastructure development in health sector. All levels of services in health

sector viz. primary, secondary and tertiary are in bad shape. State can get loans/ grants from the multi-lateral organizations like World Bank, JICA, etc. to improve their facilities, but these facilities are likely to run down rapidly in the absence of adequately funded maintenance system and poor management system. Government do not have requisite fund and the skilled manpower or efficient management to run their services in health sector. Wide gaps are seen in the number of health professionals under government facilities (Bihar A Rapid Private Health Sector Assessment, World Bank 2005). Also, public awareness of and expectations from health services provided by the government are rising rapidly. This expectation is further fuelled by the rapidly escalating cost of medical care provided by the private sector. Private sector constantly raises the bar on the range and quality of healthcare services, thereby increasing the cost. This seriously affects the citizens, especially poor people. In the present scenario, it is unlikely that public sector allocations or spending on health care would improve the situation. On the other hand, government may rope in private players to address some of the issues in the health sector. The private players can bring fund as well as expertise to improve the health sector in the state. The private players can be involved in the following manner:

(i) Specialized Services

Private sector partners/ hospitals can be contracted to provide specific specialized services. The agreement may specify service package, quality standards and costs. PPPs may be used to upgrade and operate specialised treatment services/ wards and facilities within public hospitals on profit sharing basis. Government can ask private players to provide quality health care in the public facility on a pre-determined fee to be paid by the

government. Also, the government could partner with private hospitals to provide medical services to patients at private facility. Private players can fix or reserve a certain number of patients per day. Apart from this, support services such as diagnostic services could be outsourced to specialized providers meeting quality standards. The services could be provided on pre-negotiated fee to be paid on regular interval by the government.

(ii) Management of Existing Hospital

Government health care facilities are available in many of the prime locations in the state, but these are poorly managed. Government could hand over the management of an existing public hospital to a well-established private partner. The partnership can give responsibility to private players for investing in the hospital for its up-gradation or expansion and management. Government should play an active supervisory role whereas; daily executive function may be in the hands of the private partner. Bill on behalf of the poor people can be paid by the government. For remote areas or the locations where there is no government set up to meet the health requirements of the public, a new form of partnership can be started. Government could invest in land and building of a new hospital and private partners could bring in the equipment and be given the exclusive management role. Government should be participating in the governing board. This partnership can be in the form of a joint venture or a management consortium. Government could participate in fixing fees for various medical services provided to the poor and could even pay to the JV a fixed price per poor patient treated in such hospitals.

(iii) Support Services (Ambulance, Call Centres, etc.)

Private players may be invited by the government to provide emergency transportation and trauma care service networks in States. There should be free helpline numbers functioning round the clock. Ambulance and trauma care mobile team attached with emergency wards in private and public hospitals can be user fee basis. Government could provide start-up financial assistance to private sector partner. But, private partner should have the responsibility to maintain and upgrade the infrastructure through user fees agreed with government. The user fee should have a variable fee structure to cover the poor. Government can pay for the services on behalf of the poor to keep the service financially healthy. The government of Bihar has already started similar PPP arrangement in the state capital. Based on the experience of this facility, the same can be started in other parts of the state.

5.8.3 Water Supply & Sanitation

In Bihar, there is lack of access to reliable, sustainable and affordable water supply and sanitation facility. All indicators pertaining to water supply and sanitation indicate poor condition existing in the state. Bihar being one of the least urbanized state, sewerage facility is alarmingly low in the state. Infrastructure required for providing water and sanitation facility is almost non-existent in the state. In this scenario, involving private players may help in addressing some of the issues. But, it may be difficult to persuade private players to get involved in the provision of these basic services as this sector requires huge investment. Starting a PPP in this sector would require capacity development and policy changes on part of the government. There should be enough incentive for the private players to experiment in this sector. There is a need to rework the incentive structures in Government to

reward entrepreneurial behaviour leading to public good rather than analysis-paralysis and articulation masquerading as output delivery (Shailesh Pathak, 2007). PPP model for this sector should be developed so that private players are given as less risk as possible. The government can make capital investment and private players will manage the operations and maintenance of the system. From case studies, it is learned that a successful PPP in water supply is possible if there is sufficient revenue from user charges. Government may face stiff resistance as people in the state are fulfilling their demand for water from private bore wells. There should be political and citizens support for initiating any PPP in this sector. For uninterrupted and quality water, public awareness through sustained efforts needs to be built to pay for water. In sewerage, again there is lack of required infrastructure, government and private players have to start from the beginning i.e. creating awareness among the public, establishing infrastructure, maintenance, operation, billing, collection, etc. In this situation, a PPP can be started in the following manner:

(i) Source to Tap Integrated Management of Water Supply

A special purpose vehicle should be created to look after the PPP arrangements. All capital expenditure may be borne by the government. Technological support will be provided by the private players. Operations and management contract with private players. Government should guarantee financial support to private players to run the system efficiently. Private player will manage new connections including collection of applications, connection charges, install water meters and recover expenditure from consumers, develop customer information system including 24x7 call centre, etc. The government should create awareness

and convince all the stakeholders to actively participate in the project. Government should make every effort to make PPP a commercially viable project.

(ii) Laying of New Sewerage Network and Scientific Disposal

Keeping in mind the environmental and public health impact of sewerage system, Government should start a viable PPP model in the state. There is need of construction of new pipelines and boosting pumping station up to consumer levels in the state. The private player can be roped in to create new sewerage infrastructure and scientific disposal of the waste. Private player may take care of operations and maintenance of the new infrastructure created.

5.9 Concluding Remarks

The case analysis of various PPP projects is interesting as well as informative in many senses. There was no pre determined rule for achieving the success. No pattern was observed either in terms of partnership pattern or geographical reach. All projects were unique in terms of providing a services, payment mechanism and scope. The PPP projects spread across different regions were started to address the core issues related to level and quality of services. The private players were hired with a mandate to improve the service delivery where the government was incapable of providing quality services. Involvement of private players improved education and health indicators and water & sanitation facilities. PPP helps in improving the delivery of social services in efficient and timely manner. The PPP projects were also aimed at expanding the services and make use of resources in a better and efficient way. The government by bringing private players can achieve its development indicators as these private players

provided services in a more efficient way. The case analysis of PPP across three sectors justified the hypothesis that a well defined PPP with clear guidelines and intentions improved the level of services in a more efficient and timely manner. A clear message from these PPP initiatives is that, contrary to a widely held view, private participation in social sector does not need to favour those who are well off. Indeed, these PPPs are often targeted at population who are being poorly served by the existing service delivery systems. To achieve the required result, there should be good policy design, careful implementation, flexibility in provision and effective political management. Based on case analysis of PPP projects and discussion with stakeholders, lessons and guiding principles were derived. The potential of PPP in Bihar was also discussed in the chapter. There is huge scope for involving private players to deliver public services in the state provided that state government and the private player, and citizens learn from the mistakes committed in various PPP projects. There is a need to involve citizens and make them a primary stakeholder in a project. There is need on part of government functionaries to change their attitude towards the private player and treat them as partners and not just a contractor. Private players should also understand the responsibility of providing better services at a reasonable cost at a lower profit margin. They can contribute towards the overall development of the state of Bihar.

CHAPTER 6

BRIEF SUMMARY AND SUGGESTIONS

This chapter is the concluding chapter of the thesis. On the basis of qualitative and quantitative analysis, and keeping in mind the aim and objectives of the study, Section one of the chapter presents brief summary of the study. An examination of findings and conclusions of the study pointed out a variety of issues and concerns, which need to be addressed for the evolution and effective implementation of public-private partnership in social sector in Bihar. Accordingly related suggestions are outlined in the next section of the chapter.

6.1 Brief Summary

Chapter 1 deals with importance of social sector for the development of a country and welfare of its citizens. Synergy between social sector and economic development has been explained in the chapter with the help of economic theories and empirical evidences. Economic development has often been used in the past as a synonym of economic growth, considering increase in output of goods and services as the measure of economic growth. During 1970s, new economic theories proposed not to consider economic development identical with economic growth. The focus has been shifted to new indicators which measure the human well-being. Many economists have tried to measure economic development in terms of social sector indicators like health, education, food, water supply, sanitation, etc. There is crucial link between the social sector comprising education,

health and water & sanitation and economic development of a country. Better educational facilities, improved health conditions and better access to drinking water & sanitation is crucial for improving the human capital and thus achieving higher economic development. Social sector is perhaps the most critical area in any economy as it affects and determines the economic development of a country. The performance of India with respect to social sector has been poor as compared to most of the developed countries. India has poor outcome in most of the health indicators which has been further worsened due to the high population growth. Mean years of schooling for adults is the average number of years of education received by people of ages 25 and older is lowest in India (4.4 years), which is much below than Australia (12), France (10.6) and United Kingdom (9.3). A country with higher investment in research and development, educational facilities, health services are expected to achieve higher future returns. The pattern of expenditure incurred by various countries is one of the reasons behind the different levels of social sector outcome. In India, a meager amount of GDP is being spent in health (2.4 per cent) and education (3.1 per cent), whereas the same figure is as high as 9.7 per cent and 6.8 per cent in Norway. Experiences of number of countries like Australia, Norway, United States, etc. shows that channeling significant amount of financial resources in social sector greatly enhances the human capital and hence the overall development of these economies.

In the six decades of economic planning, India has undoubtedly experience large quantitative expansion in terms of per capita income and national income, but the quality of life in terms of access to better

educational, health and other social services is still very poor. There are still large sections of the economy that have little or no access to basic social services like education, health care, clean drinking water, shelter, etc. There exist wide socio-economic inequalities between regions and people. In this scenario, the status of development of social sector in a backward state like Bihar may not be expected to be satisfactory. Bihar's performance lags seriously behind national trends in almost all indicators. Income growth and consumption levels in Bihar has lagged behind and thereby widened the gap between Bihar and rest of India. The HDI ranking of the state is among the lowest at 21 reflecting the poor human development in the state. Various studies have found that most districts of Bihar can be classified as backward districts (26 out of 39). Development status of the social sector in the state is pitiable lower than the national level and its management is also in a mess. Apparently, the basic socio-economic infrastructure in Bihar is relatively poor than other states of the country. Poor delivery of basic services clearly reflects government's inability in providing these services to the masses in an efficient manner. As the importance of access to basic social services has risen, there is increase in interest for private sector to play a greater role in the provisioning of social services. The State of Bihar is in a greater need of modern infrastructure across almost all sectors of the economy. Therefore, greater adoption of PPP approach would be necessary to meet huge requirements of the State. The PPP approach, in the context of the State of Bihar would be required not only to supplement state resources but also to bring in best practices to increase operational efficiency.

Chapter 2 presents relevant literary work done over the years related to the public private partnership (PPP) in the delivery of social services. The chapter critically examines the literary work carried out by eminent persons in the field of public private partnership and reports published by different national and international agencies. The review of literature covers various aspects of PPP in India and in other countries as well. But, it fails to analyze the reasons and need for PPP in providing social services. The review of the related literature clearly demonstrates that not much effort has been made to examine the involvement of both private and public sector together for the development of economically backward states like Bihar. The present study is an attempt to fill the gap in research in this field and come up with suitable policy recommendations. In this backdrop, several objectives of the present study have been set in the next section. It also discusses the research methodology which had been adopted to fulfill objective. The research objective, hypothesis, data sources and methods adopted for data collection, data analysis and limitations of the study has been presented in detail in this section.

Chapter 3 presents a brief geographical, administrative and socio-economic profile of Bihar and discusses the problems and relative position of Bihar in delivering the social services among the major states. The public service mechanism and its outcome within the state of Bihar are analyzed in this chapter. This chapter has clearly outlined the deficiency in the delivery of social services by the public entity. Relative performance of Bihar vis-à-vis major states in terms of outcomes related to education, health and water & sanitation has been examined. It was found that Bihar ranks lowest amongst major states

in almost all indicators. Bihar has highest percentage (53.5 per cent) of poor people among major states in India. In education sector Bihar's performance is dismal and literacy rate stands at 63.8 per cent against the national average of 74 per cent. Bihar has failed in enrolling its children and net enrolment ratio (NER) for primary school is just 84.3 against hundred per cent enrolment seen in the states of Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra and West Bengal. The national level NER is 98.6 per cent. In health sector, Bihar's rate of progress in the last decade has been very slow. Maternal mortality ratio (MMR) in Bihar was 261 in 2007-09 whereas; it was 134 in Andhra Pradesh, 148 in Gujarat, 81 in Kerala and 172 in Punjab. The same mixed relative performance is witnessed in child health. The facility of clean drinking water and sanitation facility in the state are not up to the level as per the standards prescribed by various agencies. In India, only 51.8 per cent of households have access to sanitation facilities. The situation is particularly worse in case of poor states like Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh and Uttarakhand where more than 60 per cent of the people have no toilets. A very high percentage (74.1 per cent) of people in the state does not have sanitation facility within their house. Analysis of major social sector indicators reveals the depressing performance of Bihar amongst the major states in India. The poor levels of outcomes can be attributed to poor social services and input indicators. These are also reflection of inefficient public delivery system, which has failed to reach the poorest section of the society. There are infrastructural, governmental and human resource gap in the delivery of services. The service

delivery in social sector in Bihar is inadequate to meet the demands of people of the state. The above analysis of service delivery in three sectors namely, education, health and water & sanitation reveals that there is limited success on part of state government in providing basic needs to its people. The expense incurred by the government has not produced the desired level of services. A substantial proportion of public health expenditure gets consumed by salary of its staff. The poor are not able to access the services and not reaching the neediest people. The analysis of these three sectors calls for an immediate attention on part of government. But due to financial and administrative constraints, government on its own cannot solve the problem in short duration of time. The current depressing situation of Bihar thus, makes a strong case for involvement of private players in delivering the social services. Economic development being a multi-sectoral process; the strategy for economic development must build on a broad range of social investments as well as strategies to encourage private-sector business investment.

To implement a public private partnership for the provision of delivery of social services, it is imperative that the conceptual framework related to PPP is well understood. **Chapter 4** provides concepts, evolution and significance of a PPP project. Basic characteristics, associated risks and responsibilities, advantages and disadvantages and misconceptions with respect to PPP are well documented in this chapter. It was found that there is no distinct definition of Public Private Partnership (PPP) around the world. The definition of a PPP depends on the ways and kind of services it aims to provide. So, the authority would like to define a PPP which suits

them most and fulfill their desired outcome. A PPP invites a score of benefits and associated risks thus definitions are required to identify eligible projects or arrangements that could be the recipients of desired benefits or applicable procedures or treatment. There are various compelling factors which makes case to initiate a PPP project. PPP can achieve economy efficiency gains and reduce government overload. A PPP offers opportunities for the private sector to do business with the government and thus enlarge the business market for the private sector. The public can look forward to have the timely and efficient sustained delivery of services. A PPP can be started for visible benefits like private sector innovation, efficient & cost effective delivery of services, less fiscal burden and optimal sharing of risks and cost. However, PPP may have various disadvantages as well. It was found that sometimes, a PPP project prefer the economic aspects of the project to the social and environmental aspects. The underlying logic for establishing public private partnerships is that both the public and the private sector have unique characteristics that provide them with advantages in specific aspects of service or project delivery. The most successful partnership arrangements draw on the strengths of both the public and private sector to establish complementary relationships. PPP brings together core complementary competencies of partners. The roles and responsibilities of the partners may vary from project to project. It is alleged that the PPPs is a way of relieving the government of its responsibilities, and deviate from the concept of welfare state, where only the fittest survive and the poor are left to cope as best they can. PPP projects are prone to some risks ranging from asymmetry of

information, economic, social, infrastructure and policy risks as well. Public private partnerships can vary in the degree of risk allocated between partners; the amount of expertise required on the part of each partner to negotiate contracts and the potential implications for users. The allocation of risk between partners is a key consideration that affects other aspects of partnership agreements, including: rewards; investments, and responsibilities. Accordingly, there could be number of agreement or arrangements, with their variation and combinations, may be arrived at by the government agency or the local authority for undertaking projects. Given the numerous forms of public private partnership potentially available to public sector, there may be confusion as to what constitutes a public private partnership. Various misconceptions are associated with PPP about its nature, method, benefits and motive of private players. There is a common perception that private players will not be interested in providing services but in making profits at the cost of taxpayers' money. Various stakeholders say that they may be more interested in exploiting the resources and facilities made available to them. Thus, chapter 4 makes an honest attempt to understand the various theoretical issues related to PPP.

Chapter 5 discussed practical aspects, successes and failure associated with PPP projects in social sector running across the country. A PPP project may be theoretically different once it becomes operational. To understand the real time problem and salient features of PPP, it was necessary to analyze some of the PPP projects in great detail. The case study presented in Chapter 5 provides detailed analysis of 24 PPP projects in the area of education, health and water & sanitation. These studies highlight purpose, results achieved and

lessons of each PPP projects. Simple observations of contracts between public and private partners show a large diversity of partnerships. The ownership, risk factor and payoffs structure provides understanding about the way public and private partners can work together for better results. These case studies also draw lessons from failed PPP projects that should be kept in mind while devising a PPP to avoid any disruption of project. The results drawn from case studies further strengthen the argument for involving private players for the provision of social services. Based on case study and discussion with various stakeholders, factors which lead to the success of a project was discussed. It was found that each PPP should be defined, modeled and operated separately depending largely upon the local conditions and requirements. A state like Bihar is characterized by a huge diversity of demand requirements, supply constraints, regulatory frameworks, political realities, and levels of private sector participation. This fits with the ever-widening definition of a public private partnership from large-scale concession contracts involving private sector finance, to smaller scale service arrangements involving multiple parties from the for-profit and/or not-for-profit sectors. The complexities involved with PPP suggest that it would be unwise to seek to replicate model PPP arrangements which are successful in other parts of the country. However, based on the case study and experience regarding the key success factors and obstacles to formulating robust and well-governed PPPs, potential area for starting a PPP model is presented in this chapter. It was found that each PPP projects were unique in terms of providing a services, payment mechanism and scope. The PPP projects spread across different

regions were started to address the core issues related to level and quality of services. The private players were hired with a mandate to improve the service delivery where the government was incapable of providing quality services. Involvement of private players improved education and health indicators and water & sanitation facilities. PPP helps in improving the delivery of social services in efficient and timely manner. The PPP projects were also aimed at expanding the services and make use of resources in a better and efficient way. The government by bringing private players achieved its development indicators as these private players provided services in a more efficient way.

A critical examination of various case studies revealed that a well prepared and efficiently managed PPP project have positive impact on social sector outcomes. PPP project in the field of education started in Andhra Pradesh, Punjab and Rajasthan showed that a PPP project can help improve attendance rate of students, increase enrolment ratio and enhance capacity of the school. Health PPP projects in Andhra Pradesh, Karnataka, Assam and Gujarat improved health outcomes. There was considerable improvement in access to health facilities and people at large were greatly benefited. In case of water supply and sanitation there was remarkable improvement in services with low breakdowns and improve in quality of water supplied and enhanced cleanliness level. Based on these evidences, it is found that involvement of private players improves health indicators, better education attainment and improved water & sanitation facilities. Thus, first hypothesis as stated in the research methodology holds true.

It was found that one of the reasons for a success of a PPP projects is close monitoring and meeting the deadlines. There was a clause of penalising a private player if there is a delay in implementing the projects. It not only ensured the timely completion of project but also kept cost of project at lower side. There were no cost overruns due to delay. PPP projects completed on time started delivering services in efficient and timely manner. The objective of providing services to the people in better manner was achieved. Hence, a PPP helped in improving the delivery of social services in efficient and timely manner. Thus, it can be concluded that second hypothesis i.e. PPP helps in improving the delivery of social services in efficient and timely manner holds true.

6.2 Suggestions

The public sector plays a major role in the financing and provision of social sector services including education, health and water & sanitation. The government play a dominant role in this sector as these services satisfies the characteristics and the definition of public goods, particularly at the basic level since they benefit a nation's social and economic growth as a whole. Much research confirms that levels of social sector have a positive correlation with a nation's economic development. Public investment in infrastructure will have to bear a large part of the infrastructure needs in backward and remote areas to improve connectivity and expand the much needed public services. Since resource constraints will continue to limit public investment in infrastructure in other areas, PPP-based development needs to be encouraged wherever feasible. It is necessary to review

the factors which may be constraining private investment, and take steps to rectify them. PPP, with appropriate regulation and concern for equity, should also be encouraged in the social sectors, such as health and education (Approach to the Twelfth Five Year Plan, 2011).

Several State Governments have already taken steps in this direction. A large number of PPP projects have taken off, and many of them are currently operational in both the Centre and the States. Bihar is slow in this direction and it should make efforts to attract private investment through PPP route. The findings from case studies provided practical insight for developing a PPP project that can be implemented in Bihar. The suggestions provided in this chapter are drawn mainly from the analysis of case studies and discussions held with various key stakeholders presented in the previous chapters. It is predicted that the principles outlined below, if adhered to, can be quite helpful in preparing a good PPP project with benefits to the parties participating in the project and ensure better level of services for the people of the state.

(i) Clarity about PPP:

The contract between public and private partners should be clear and acceptable to both the parties. Critical issues like Memorandum of Understanding and pricing of services have deep impact on the success of a PPP. Symmetric information between public and private sectors is a key element in formation of a successful PPP. Incomplete and asymmetric information may defeat the whole purpose of a PPP. Similarly, the allocation of risks should be distributed in a manner that the best person gets the appropriate responsibility. It is imperative

that risks are allocated in a best possible manner. Thus for a successful partnerships, there should be clarity about the objectives and the respective strengths of partners should be exploited in best possible manner. In the context of a state like Bihar, where access to quality, equity and financial support are still problematic, partnerships need to be transparent. To ensure quality, for instance, establishment of a transparent and accountable regulatory framework is necessary for the private sector participation in a PPP.

(ii) Task Force:

Consideration should be given to establish a new task force or specialized units within the government set up and project advisory, preparation and funding institutions, targeted at the public health, basic education, and water and sanitation sectors. Each unit should have a dedicated budget with experienced professional staff, and be mandated to improve the supply of viable PPP projects. Proactive approaches in establishing a unit are needed, rather than the reaction to formal requests as is common at present. More timely assistance can then be provided with long-term institutional and human capabilities to identify viable PPP project. These units can structure robust and bankable PPP projects, put together risk-adjusted project scopes, and manage competitive and transparent tendering processes.

(iii) Political Will:

A common barrier to private sector investment and participation in social sector are the political risks like nationalization, confiscation of assets, termination of contracts due to political pressure, and operational disturbances such as construction stoppages arising from user-fee

boycotts. Political risk can make projects more costly and less efficient, reducing their efficacy. Direct involvement of civil society organizations in concessions, licences and contracts can play a part in reducing the political risks for the private sector of participating in health, basic education and water projects. Private sector participation in the provision of public services is a politically controversial topic in many countries, both developed and developing. Basic education, health, water supply and sewerage are particularly affected. Despite positive comparisons with the public sector in terms of value for money, the prospect of private companies running fee-paying schools or public health facilities for low-income communities can also be controversial. Many bilateral development agencies shy away from supporting the expansion of this sector, preferring instead to support universal free basic education and primary healthcare. From both a private and public perspective, there are thus considerable benefits from engaging the not-for-profit sector in PPPs in these more politically sensitive sectors. Equity-based joint ventures and other forms of collaboration between the for profit and not-for-profit private sector have the potential to mobilize much needed fund while strengthening the political acceptability of private sector participation in public services.

(iv) Governance:

Effective governance within a public-private partnership arrangement is complex. PPP actors often have preconceived ideas about each other's motives. Public and private institutions also sometimes have quite different underlying interests in and expectations for their

collaboration. The idea that one partner is weak and is less important can often present a stumbling block to success. Perceived inequalities in the relationship can result in lack of trust. These preconceptions, differing interests, and lack of trust make transaction costs in PPPs high. Strong governance arrangements between partners are therefore very important. Partnership governance is multi-layered, involving transparency and accountability not only among the partner institutions, but also to the project or programme beneficiaries and the wider public.

(v) Policy Framework:

The legislative framework has to be streamlined to ensure that PPPs are effectively implemented over the long run. Government should bring necessary reforms at all level of administrative set up to create an enabling environment for projects. The existing legislature should be critically evaluated to ensure that it has the appropriate corporate and commercial laws in place to support private investment. Government should carry out necessary reforms through legal, policy and institutional framework before starting the process of partnership with the private players. Competencies that improve the quality and sustainability of service delivery and facilitate the organizational changes is required to reform wider public-sector delivery systems and their institutions. A weak public institution is unlikely to succeed in achieving developmental outcomes that are sustainable. The need for a consistent policies and legal systems that support long-term engagement by the private sector is a key to the success and scaling up of PPPs.

(vi) Citizens as Primary Stakeholders:

In general, role of citizens is overlooked in most of projects initiated at government levels. But, various PPP project exhibited that the citizens support and participation right from the beginning of the project plays a crucial role in achieving the target set under the project. There should be citizens' support for initiating any PPP in these sectors. The view point of citizens which are largely the beneficiaries should be taken into account right from the beginning of the project. There is a need to involve citizens and make them a primary stakeholder in a project. PPP should add one more dimension to it which is the citizens or the beneficiaries of the project.

6.3 Conclusion

Public-private partnerships (PPPs) in the delivery of public services have become a phenomenon which is spreading the globe and generating great interest. The reasons for such trend all over are that PPPs avoid the often negative effects of either exclusive public ownership and delivery of services, on the one hand, or outright privatization, on the other. In contrast, PPPs combine the best of both worlds: the private sector with its resources, management skills and technology; and the public sector with its regulatory actions and protection of the public interest. This balanced approach is especially welcome in the delivery of public services which touch on every human being's basic needs. Development institutions and public authorities alike need to broaden their outlook on the role of the private sector in health, education and water. Mobilizing private sector resources means more than tapping

private sector funds. It also means employing strategic in-kind contributions, innovation by private sector contractors, low-cost products and services, and the application of management efficiencies and performance-based approaches to institutional capacity building.

In backward regions like Bihar, the realities of providing public health, basic education, and water and sanitation requires simultaneously achieving multiple development goals, viable financial returns and getting political and public support. Also, the institutional strengthening is one of the most important goals to ensure the sustainability of recurrent expenditure and development outcomes. Public-private partnerships are a logical response to managing this complexity. There is an urgent need to take immediate steps towards providing basic services to the citizens of the state. Educated and healthy people can only contribute to society and the nation at large. Bihar being the resident of over eight crores persons should devise innovative methods to achieve the target of holistic development of the state. It is not possible for the nation to leave behind Bihar and march ahead towards new development strategy. Former President of India A. P. J. Abdul Kalam said that India can only succeed if Bihar prospers.

This dissertation has shown that the involvement of private players for the delivery of social services is feasible, profitable and efficient. PPP in social sector has not received much attention from the private players due to longer gestation period and demand of high level of expertise. Many PPP projects are organized through complex contracts whose efficiency should be analyzed to make necessary changes in the structure. It is necessary that the management of a

public private partnership should be clearly defined and understood to achieve the desired results. This dissertation has tried to provide a useful and rigorous theoretical framework for the study of public-private partnerships in the management of social sector services. However, PPP needs to be understood in a better way which makes contractual arrangements between public and private entities a successful venture.

To conclude, public private partnership initiatives have the potential of improving most of social sector service delivery mechanism in Bihar. The relevant theoretical as well as practical framework to formulate a successful partnership between government and private players is presented in this dissertation. There is need to integrate the expertise of both the players in solving the problems in a more efficient way. However, there can be some refinements in the theoretical aspects to make necessary changes in the model to offer reasonable proposition to decision makers both in public and private entity. A defining success for a PPP is value for money, which means that total costs of a project implemented by PPPs should be lower than that implemented by the conventional public delivery approach under the same quality level (Leigland, 2006). This dissertation has tried to propose some of critical issues pertaining to PPP and insists on creating an environment where public and private players can work coherently which may prove to be beneficial for all the stakeholders. This dissertation has tried to address some of the concerns raised about the success of a partnership in social sector. These concerns seem to motivate new axes of research in the economic literature, and this dissertation has tried to help this effort along.

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Recent PPP Initiatives in Social Sector in Bihar

Government of Bihar realizing the importance of involving private players has started various PPP projects in the state. Some of the major initiatives are presented below in this section. This list is not exhaustive as many PPP are still in pipeline and are in the process of inviting tenders and negotiations.

(i) Emergency Medical Service /102 – Ambulance Service

The service of providing the facility of ambulance on a telephone call has been introduced in the state with the collaboration with a private player. A toll-free telephone number 102 was launched during 2006-07 and is running in all the six regional headquarters successfully. Under this scheme ambulance for emergency transport is being provided in all the districts of Bihar. The empanelled ambulance & ambulance available in Govt. institutions are made available on receipt of calls from the beneficiaries. This service has been outsourced to a private agency for Operationalisation. The Telephone Charges for the free toll free number is paid to BSNL by State Health Society Bihar. The amount required would be for payment of incoming calls received from the beneficiaries.

(ii) Doctor on Call & *Samadhan*: Dial 1911

A scheme is operational in the state wherein patients can dial a number and call for doctors. For this a special toll free number of 1911 has been operational since March 1, 2008. The objective of the scheme is to give medical assistance to the patients at their home at any time as well as act as a *Samadhan* of Rogi Shikayat. Doctors and Specialists have been empanelled

for this scheme. Pathology labs have also been attached to collect samples for tests from patient's home.

(iii) Advanced Life Saving Ambulances/108

State Health Society Bihar is providing prompt quality pre hospital care to patients, trauma victims, pregnant women, for the purpose of which Emergency Network service is being piloted under PPP in Patna District. The objective is to save lives of Road Traffic Accidents, cardiac emergencies, fire victims and other emergency cases. There are 5 Advance Life saving Ambulances (Trauma, Critical & Cardiac Care) & 5 Basic Life saving Ambulances which run within Patna Municipal Corporation area and its sub urban areas. Every Ambulance is manned by a Driver, an Emergency Medical Technician and trained Helper to provide basic care during transportation of patients. The project has been successfully piloted in Patna town which provides timely emergency services and additionally is adding to the goodwill of the Government.

(iv) Setting Up of Ultra-Modern Diagnostic Centers in Regional Diagnostic Centers (RDCs) and all Government Medical College Hospitals of Bihar

Ultra-Modern Diagnostic Centres through Public Private Partnership (PPP) in nine Regional Diagnostic Centres (RDCs) and six Medical College Hospitals (MCHs) of Bihar have been or are in the process of being set up. M/s Softline, New Delhi and M/s Doyen Diagnostics, Kolkata are the private partners in this initiative which caters to high profile districts of the State. Project area includes Regional Diagnostic Centers in Ara, Gaya, Bhagalpur, Munger, Muzaffarpur, Motihari, Purnea, Saharsa and Chapra. The scope of the project is to operate, maintain and report 24-hours 'Ultra-Modern

Diagnostic Centers' in RDCs & MCHs and report the progress to the RDDs (who would be in-charge of monitoring the RDCs project) and the Superintendents (who would be in-charge of monitoring the MCH project) and the SHSB.

(v) Mobile Medical Unit

SHSB on behalf of the Department of Health, Government of Bihar invited Private Service Providers for providing Mobile Medical Units to provide primary health care facilities in the hard to reach rural areas of various districts of Bihar. Three agencies have been awarded the contract for operationalising mobile medical units in all the districts. The scope of work includes professional manpower, and other such services, to provide and supplement primary health care services for the far flung areas in the various districts of Bihar and to provide a visible face for the Mission, also establishing the concept of Healthy Living among the rural mass.

(vi) Mapping of Urban Areas in Bihar for facilitating Urban Health Planning through PPP

National Rural Health Mission (NRHM) focuses primarily on rural population; it acknowledges the condition of urban slums where proper interventions are equally important. However to focus solely on urban health, Govt. of India is planning to initiate National Urban Health Mission in near future. As a preparation for Urban Mission, the Department of Health intends to map all the urban slums and service providers in and around those slums. M/s Research & Development Initiative Pvt. Ltd., New Delhi was contracted to undertake mapping of urban areas (123 units) of Bihar to enable proper planning for upcoming National Urban Health Mission. The study included Mapping of all the major cities/towns/urban

agglomerations of Bihar with special emphasis on slum settlements and health facilities in each slum. The study has subdivided the urban area into units of 50,000 populations and provided an A3 size map of the same showing the slum. Also, mapping of all the health service providers especially service providers within and around the slums has been accomplished. This is to be done with an intention to identify likely referral services available.

(vii) Solid Waste Disposal in Patna

The integrated approach to waste management has been introduced in Patna with the help of a private player, IL & FS IDC. This project ensures that all aspects of waste management i.e. collection, transportation, processing and disposal are carried out in a scientific manner with special emphasis on processing through a mix of technologies. Each component of waste gets its due treatment; composting/ biomethanation for segregated organic waste, Refuse Derived Fuel (RDF) for mixed waste, inert management for inert matter and likewise. The concept ensures that least waste goes to the landfill thereby promoting recycle and recovery and also reducing load on landfills.

Public-Private Initiatives in Health Care in India

<i>S. No</i>	<i>Project / Program</i>	<i>Services scope</i>	<i>Geographic scope</i>	<i>Institutions</i>
1	Urban slum health centers	Primary health care, including RCH	Andhra Pradesh	Commissioner of Family Welfare, NGOs, World Bank (infrastructure funding)
2	Primary health centers in poor areas	Primary health care, especially RCH, community-based health insurance scheme, telemedicine	Karnataka, Arunachal Pradesh	State DHFW, Karuna Trust, UNDP (insurance)
3	Urban community health Center	Primary health care, including RCH	Bihar (Patna)	State DHFW, Kurji Holy Family Hospital
4	Janani, including Titli centers and Surya clinics	RCH and other primary health care, contraceptive products	Bihar	National MHFW, DKT, International, Acumen Fund (financing)
5	Social marketing scheme	Contraceptive distribution	Uttar Pradesh	State DHFW, SIFPSA, HLL, Lifecare, HLPPT, PSI, DKT
6	GVK Emergency Management Research Institute	Emergency medical response service, training	Andhra Pradesh and 8-10 other states to varying degrees	International State governments (regulatory infrastructure, funding, equipment), GVK industries, various professional associations and corporations

7	Health Management and Research Institute	Integrated digital health network, counseling, information services, telemedicine, mobile medical units	Andhra Pradesh	State government, Aarogyasri Health Care Trust, NRHM, GVK EMRI, various professional associations and corporations
8	World Health Partners	Leveraging existing private providers into networks through training and support services, telemedicine	Uttar Pradesh (pilot project)	NRHM, Venture Strategies for Health and Development, VisonSpring, Indian technology companies
9	LifeSpring Hospitals	RCH for lower income urban households	Andhra Pradesh	HLL Lifecare, Acumen Fund (equity partners), possibly JSY (government program)
10	Byrraju Foundation Health Program	Village primary health centers, referral network, RCH, care of specific diseases	Andhra Pradesh (6 districts)	Loose affiliations with a range of public and private organizations
11	NICE Foundation	Neonatal intensive care and emergencies, tribal RCH, school health care	Andhra Pradesh, Rajasthan (school health program only)	Naandi (NGO), Dr Reddy's Foundation for Human & Social Development (CSR initiative of Dr Reddy's Labs)
12	Smile-on-Wheels Program	Maternal and child health care in urban slums through mobile medical units	Delhi + 6 other states	Smile Foundation, state and city governments, local NGOs, corporate sponsors

13	Rashtriya Swasthya Bima Yojana	Health insurance for the poor	All-India	National and state governments, private insurers
14	Up Lift Health Mutual Fund	Community-based mutual health insurance funds for urban and rural poor	Maharashtra	UpLift India Association, domestic and foreign NGOs, domestic corporations, hospitals
15	Micro Insurance Academy	Research and training for community-based health insurance	Multiple locations (pilots and research support)	Sarvajan Unnati Bodhini Charitable Trust, European Union, domestic and foreign NGOs, academic institutions
16	Yeshasvini,	Cooperative farmers health care scheme, based on health insurance	Karnataka	State government, government trust, national regulator (IRDA), private hospitals, private insurers
17	Arogya Raksha Yojana	Microinsurance for urban and rural poor, health clinics	Karnataka	Biocon Foundation, Narayana Hrudayalaya Hospital, independent rural service providers, ICICI Lombard.
18	E-Choupal	Primary health care, telemedicine, health education for consumers	10 states	ITC, national and state governments (funding and regulations), private hospitals
19	Chiranjeevi Yojana	Institutional deliveries for the poor	Gujarat	State government, NRHM, private providers, IIM (A), SEWA-Rural, GTZ

20	SMS Hospital, Jaipur	Contracting out pharmacy and equipment services	Rajasthan	Government hospital, private contractors
21	Uttarakhand Mobile Hospital and Research Center	Mobile medical services in hilly terrain	Uttarakhand	State government, TIFAC (national parastatal), Birla Institute of Scientific Research
22	State Malaria Control Society	Contracting out information, education and communication services	Gujarat	State agency, private providers, pharmaceutical companies (funding) State agency, private providers, pharmaceutical companies (funding)
23	Hospital maintenance	Contracting in cleaning, maintenance, security, etc.	Many States	Government hospitals, private providers (e.g., Sulabh International)
24	Mother and Service NGO Schemes	Provision of RCH and family planning services	All-India	MoHFW, state and district health services, PRIs, NGOs (implementation and monitoring)
25	Rural health centers	Primary health services, public health management	Gujarat (4 centers)	State government, district and local governments, SEWA- Rural Municipal Corporation
26	Health center for urban poor	Primary health, especially for women and children	Delhi	Delhi, Arpana Trust
27	Rural maternal health	Safe abortion, delivery services, social marketing	Orissa	State government, Parivar Sewa Sanstha, PSI

28	Emergency Ambulance Services, Emergency Accident Relief Center	Transportation for maternal deliveries, accident victims	Tamil Nadu (1 district)	State government, World Bank (funding), Seva Nilayam (NGO implementer)
29	Public health center staffing	Additional ANMs on contract for RCH services	Multiple states	National DoFW, district governments, individuals
30	Public health center staffing	Doctors, anesthetists, nurses on contract for RCH services	Multiple states	National DoFW, district governments, individuals
31	Public hospital staffing	Wards or beds contracted to NGOs for management	Multiple states	National DoFW, district governments, individuals
32	Research on Indian medicine systems	Grants for research	All-India	Department of AYUSH (MoHFW), private research organizations
33	National Malaria Control Programme	Distribution of medicated mosquito nets	All-India	NMCP, NGOs, private practitioners
34	National Blindness Control Programme	District blindness control societies for package of services	All-India	NBCP, NGOs, private sector
35	National AIDS Control Programme	Outreach to target populations	All-India	NACP, NGOs, private sector
36	Revised National TB Control Programme	Community outreach, health education, provision of DOTS and in-hospital care, TB Unit Model, program planning, implementation, training and evaluation	All-India (14 sites)	RNTCP, NGOs, private providers, possibly medical colleges

37	Rajiv Gandhi Super-specialty Hospital	Super-specialty health care to BPL population	Karnataka (Raichur)	Government of Karnataka: District Commissioner (land, building, infrastructure, start-up funds), Apollo Hospitals, OPEC (funding)
38	Karnataka Integrated Tele-medicine and Tele-health Project	Telemedicine – coronary care	Karnataka	Government of Karnataka, Narayana Hrudalaya hospital, Indian Space Research Organization
39	Jai Prakash Government Hospital management	Rogi Kalyan Samiti (patient welfare committee)	Madhya Pradesh (Bhopal)	Local PRIs, NGOs, local elected representatives and government officials
40	Mahavir Trust Hospital	DOTS program for TB control/treatment	Andhra Pradesh (Hyderabad)	Government, Mahavir Trust Hospital, private nursing homes and providers

Sources: Annigeri et al. (2004), Dimovska et al. (2009), Government of India (2006), Raman and Björkman (2009), and various web sites

Public-Private Initiatives in Water Supply and Sanitation in India

<i>S. No.</i>	<i>Project/ Program</i>	<i>PPP Type</i>	<i>Geographic scope</i>	<i>Institutions</i>
1	Visakhapatnam Bulk Water Supply Project.	Not Available	Andhra Pradesh	Visakapatnam Urban Development Authority
2	Visakhapatnam Industrial Water Supply Project.	BOOT	Andhra Pradesh	AP Industrial Infrastructure Corp. Ltd.
3	Construction of Sewerage Treatment Plant, for Industrial Area, (Jeedimetla), Hyderabad.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
4	24X7 Continuous Water Supply in selected zones of Greater Hyderabad.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
5	Improvement of Water Supply and Sewerage Services in HiTech City area.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
6	Billing, Collection and Operation of Water Supply in HMWS Area.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
7	Strengthening of Water Supply and Sewerage infrastructure in surrounding Municipal Areas.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
8	Augmentation of Water supply from Krisnua river source.	PPP	Andhra Pradesh	Hyderabad Metropolitan water and Sewerage Board
9	150 MLD sea water based desalination Plant for Industrial water supply in Kutch	Design, Build, Finance, Operate, Maintain and Transfer	Gujarat	Gujarat Water Infrastructure Ltd.(GWIL) & Gujarat water Supply & Sewerage Board(GWSSB)
10	Improvement of water supply and sewerage system of Bharuch	Appropriate PSP model as per recommendations of the report	Gujarat	Bharuch Municipality and Gujarat Urban Development corporation(GUDC)

11	Improvement of water supply and sewerage system of Amreli	Appropriate PSP model as per recommendations of the report	Gujarat	Amreli Municipality and Gujarat Urban Development corporation(GUDC)
12	Improvement of water supply and sewerage system of Anand, and Mehsana town	Appropriate PSP model as per recommendations of the report	Gujarat	Anand and Mehasana Municipality and Gujarat Urban Development corporation(GUDC)
13	150 MLD sea water based desalination Plant for Industrial water supply in Kutch	DBFOMT	Gujarat	Gujarat Water Infrastructure Ltd.(GWIL) & Gujarat water Supply & Sewerage Board(GWSSB)
14	Improvement of water supply and sewerage system of Amreli	Appropriate PSP	Gujarat	Amreli Municipality and Gujarat Urban Development corporation(GUDC)
15	Improvement of water supply and sewerage system of Anand, and Mehsana town	Appropriate PSP	Gujarat	Anand and Mehasana Municipality & Gujarat Urban Development corporation(GUDC)
16	Improvement of water supply and sewerage system of Bharuch	Appropriate PSP	Gujarat	Bharuch Municipality and Gujarat Urban Development corporation(GUDC)
17	WB assisted Karnataka Urban Water Sector Improvement Project (KUWASIP)	Management Contract	Karnataka	Karnataka Urban Water Supply and Drainage Board (KUWSDB)
18	Construction of public toilet	BOOT	Karnataka	Bruhat Bengalure Mahanagara Palike (BBMP)
19	Water supply augmentation and 24x7 supply	BOT	Madhya Pradesh	Khandwa Municipal Corporation
20	Water supply augmentation and 24x7 supply	BOT	Madhya Pradesh	Shivpuri Nagar Palika Parishad
21	ADB Pilot - 24x7 and NRW Water reduc (Bpl, Glr and Ind)	omt	Madhya Pradesh	Department of Urban Admin and Development, Govt of MP

22	Reduction of Non-Revenue Water and Improvement of Water Supply Services in Bhopal	BOT	Madhya Pradesh	Bhopal Corporation	Municipal
23	Effluent Treatment Plant for Dyeing unit Cluster at Tiruppur	BOOT	Tamil Nadu	Dept of Administration.	Municipal
24	Tiruppur Marine Discharge	BOOT	Tamil Nadu	Dept of Administration.	Municipal
25	Effluent treatment plant for leather cluster at Ambur	BOOT	Tamil Nadu	Dept of Administration.	Municipal
26	Sewerage treatment plant for underground drainage in Alandhur by Tamil Nadu Urban Infrastructure Financial Services Ltd. (TNUIFSL)	BOT	Tamil Nadu	Dept of Administration.	Municipal
27	Tiruppur Water Supply and Sewerage Project	BOOT	Tamil Nadu	Dept of Administration.	Municipal
28	Setting up of a 100 MLD Desalination Plant at Kattupalli Village in Minjur on Design, BOOT basis	DBOOT	Tamil Nadu	Chennai Metro Water (CMSSB)	Water
29	Establishment of 120 MLD Tertiary Treated RO Plant at koyambedu	DBOOT	Tamil Nadu	Chennai Metro Water (CMSSB)	Water

Source: www.pppinindia.com accessed on 11 Jul, 2012

Public-Private Initiatives in Education in India

S. No.	Project/ Program	PPP Type	Geographic scope	Institutions
1	1000 Schools Computer Education Project, Andhra Pradesh.	BOOT	Andhra Pradesh	School Education
2	Midday Meal Programmme (Hyderabad & Secunderabad)	PPP	Andhra Pradesh	School Education
3	Upgradation of 1396 Govt. ITIs through Public Private Partnership (PPP), Andhra Pradesh.	PPP	Andhra Pradesh	Employment & Training
4	ICT @ 5000 Schools, Computer Education Project A.P.	BOOT	Andhra Pradesh	School Education
5	Development of the site belonging to District Central Library at Visakapatnam.	BOT	Andhra Pradesh	Infrastructure Corporation AP
6	ICT @ 1300 Schools Computer Education Project	BOOT	Andhra Pradesh	School Education
7	IGIAT Multi Skill Development Centre, Pulivendula.	PPP	Andhra Pradesh	Employment & Training
8	Engineering College	Lease	Assam	Directorate of Technical Education, Govt. of Assam
9	Knowledge City	JV	Assam	Bodoland Territorial Council
10	Knowledge City (Boko)	PPP	Assam	Directorate of Higher Education
11	Full facility management under ICT scheme.	BOT	Haryana	School EducationDepartment, Government of Haryana
12	Full facility management under ICT scheme.	BOT	Haryana	School EducationDepartment, Government of Haryana
13	Free Computer Education Programme in Govt. Sr. Secondary Schools	Service Contract	Haryana	School EducationDepartment, Government of Haryana
14	Free Computer Education Programme in Govt. Sr. Secondary Schools	Service Contract	Haryana	School EducationDepartment, Government of Haryana

15	Comprehensive Computer Education Project under ICT scheme in 213 Govt. Sr. Secondary Schools.	BOT	Haryana	School Education Department, Government of Haryana
16	Setting up of special schools/ institutions for differently abled under Economic Stimulus Package.	BOT	Haryana	Social Justice & Empowerment Department, Government of Haryana
17	ITIs Upgradation under GoI scheme (21)	BOT	Madhya Pradesh	Directorate of Technical Education, Govt of MP
18	ICT at Schools (1200 schools)	BOT	Madhya Pradesh	Department of School Education, Govt of MP
19	Model Schools under GoI Scheme (200 nos)	BOT	Madhya Pradesh	Department of School Education, Govt of MP
20	Colleges under GoI Scheme (39 nos)	BOT	Madhya Pradesh	Directorate of Higher Education, Govt of MP
21	Girls Hostels under GoI Scheme (200 nos)	BOT	Madhya Pradesh	Department of School Education, Govt of MP
22	ICT Education in 500 Secondary Schools	BOOT	Maharashtra	Dept. of Education
23	ICT Education in 2500 Secondary Schools	BOOT	Maharashtra	Dept. of Education
24	Setting up of ITIs/ ITCs.	BOO	Orissa	Industry Dept. / IDCO GoO
25	Institute of Hotel Management with 3 star Hotel at Bhootgarh	BOT	Punjab	Tourism Department, Govt of Punjab
26	Hotel Management Institute	BOT	Punjab	Tourism Department, Govt of Punjab
27	Polytechnic	BOT	Punjab	Technical Education Department, Govt of Punjab
28	Polytechnic	BOT	Punjab	Technical Education Department, Govt of Punjab
29	Punjab Institute of Medical Sciences	BOT	Punjab	PIMS - Medical Education & Research
30	New Senior Secondary Schools – Five schools per district; 165 schools in total	BOT	Rajasthan	School and Sanskrit Education Department

Source: www.pppinindia.com accessed on 11 Jul, 2012