

# **Intensive Public-Private Partnership for Sustainable Urbanization of Cochin**

**By  
Yashad Dongol**



**Centre for Public Policy Research  
Email: [cppr@cppr.in](mailto:cppr@cppr.in)**

## Introduction:

With over 300 million people, cities and towns of India constitute the world's second largest urban system<sup>1</sup>. Based on liberalization policies adapted by Government of India, 40% of the total population of the country would comprise the urban population by the year 2021. It is estimated that by the year 2011, urban areas would contribute about 65% of GDP. Higher productivity is contingent upon the availability and quality of infrastructure<sup>2</sup>. With 11<sup>th</sup> five-year plan of Government of India now recording a growth rate over 8%, it is estimated that Rs 20, 01,776 crore (at 2006-07 prices) or US\$ 488 billion would be required for investment in the infrastructure sectors<sup>3</sup>. Public sector alone is deficit to meet this requirement, so planning commission aims for Public-private partnership (PPP) to meet this investment needs<sup>4</sup>. Jawaharlal Nehru National Urban Renewal Mission (JNNURM) came into the scene to facilitate and catalyze the pace of urban development and identified 63 major cities (grouped into A, B and C classes) on the basis of population. Cochin is one of the cities identified by JNNURM under its scheme of urban development.

Kerala is a green strip of land located in the southwest corner of India. It has only 1.18% of the total area of the country, but houses 3.43 % of the country's population. It is one of the most densely populated states in the country with a density population of 819 persons per Sq. Km. As per latest census, the state has registered a total population of 31.80 million and more than 25% of the population lives in urban areas<sup>5</sup>. "Kerala is a development model that is touted in various corners of the developing world. In India, other states look at Kerala's record of firsts with envy. Dr Amartya Sen, the Nobel laureate, has hailed it as a model", writes Ramesh Menon<sup>6</sup>. The Kerala Model refers to an interesting phenomenon in the Indian State of Kerala where despite of economic backwardness it has achieved high rate on Human Development Indices. Yes, demographically the state enjoys a very advanced status with rapidly declining birth and death rates, low infant mortality and very high literacy, health delivery system and politically active population, but it has still a long way to go in the sector of urban development in order to meet the international standards of a city. We ought to witness the Kerala model in urban infrastructure and development.

Cochin, "the Queen of Arabian Sea", is the second most important port city on the western coast of India situated in Ernakulam District of Kerala, located in the central region of the State, between the Western Ghats and the Arabian Sea. More than 60% of the tax revenue of the State comes from Cochin and hence Cochin is rightly called

---

<sup>1</sup> Ministry of Urban Development

<sup>2</sup> Jawaharlal Nehru National Urban Reform Mission (JNNURM)

<sup>3</sup> India Infrastructure Project Development Fund (IIPDF)

<sup>4</sup> Satish Bagal, Economic and Political WeeklyPW, 2008

<sup>5</sup> Kerala sustainable Urban Development Project (KSUDP)

<sup>6</sup> Ramesh Menon, Indiatgether.org

the '**Commercial Capital of Kerala**'<sup>5</sup>. However, urbanization of Cochin still has a long way to go to cope up with the economic activities which are dependent on infrastructure, such as power, telecom, roads, water supply and mass transportation, coupled with civic infrastructure, such as sanitation and solid waste management. Analysis from the drainage system study reveals that 60% of the Kochi city area lacks proper drainage system. The existing network is inefficient, inadequate and majority of the drains are in filthy conditions. A number of identified areas in the city are frequently flooding during even moderate rains. The drainage systems empty their water and waste loads into water bodies and backwaters through the fairly flat terrain subjected to tidal effects<sup>7</sup>. The traffic demand is also not met by the existing infrastructure. According to the study of Rail India Technical Economic Services (RITES), the congestion problem in Kochi is likely to worsen as the peak hour traffic demand is expected to vary from 15,000 to 19,000 trips on certain sections in 2005 to 20,000 to 43,000 trips in the year 2021<sup>8</sup>. Water supply sector is also realizing a gap between demand and supply<sup>9</sup>. All these basic public services are expected to be delivered by the government. But how a government at a center (national or state centre) will identify the regional and local issues and address it? Where will be its position in the priority listings in the centre? Decentralization has come to a scene as a solution to these issues.

## **Development Strategy of Cochin:**

Along with the felt need of decentralization and empowerment of nodal governance at various levels the reform initiatives such as introduction of the 73<sup>rd</sup> & 74<sup>th</sup> Constitution Amendment Act and model municipal laws were executed. These initiatives gave powers to the Local Bodies to formulate their long term & short term plan<sup>9</sup> which are required to meet the development objectives and need to create an investor-friendly environment. Cochin has envisioned its city development plan in 1997 after the 73<sup>rd</sup> and 74<sup>th</sup> Constitution Amendment Act. With a stretch of 5 years, the vision document was finally prepared in 2002<sup>10</sup>. With an objective to improve urban environment, economy, and living conditions for people living in the five Project cities under the Project Kerala sustainable urban development project (KSUDP), a project agreement is made on 8<sup>th</sup> December 2006 between Asian Development Bank (ADB) and State Government of Kerala with a loan amount of two hundred and twenty one million and two hundred thousand dollars (\$221,200,000) on the terms and conditions set forth in the Loan Agreement, but only on condition that the proceeds of the Loan are made available to

---

<sup>7</sup> CDP Cochin, Urban infrastructure

<sup>8</sup> Sanjeev KV, The Hindu, 2001

<sup>9</sup> CDP Cochin, executive summary

<sup>10</sup> CDP Cochin, Introduction

the State and that the State agree to undertake certain obligations towards ADB. KSUDP also serves as the state level agency for JNNURM<sup>11</sup>. Cochin is one of the five municipalities undertaken by the KSUDP under its strategy of urban development. Cochin has come up with city development plan (CDP) in accordance with JNNURM and a master plan for the city for the improvement and development of the urban infrastructure for the lifelong and sustainable social and economic growth. The Cochin Development Plan vision for Cochin is development of

**"an economically productive, effective and socially egalitarian metropolis which will provide to all sections of society the level of services that would attract world wide attention as the desired center for heritage tourism, IT and Port based services"**<sup>12</sup>.

### **Development Status in Cochin:**

However, the things are not that easy. There is a large gap between the techno-managerial and financial requirement for the planned infrastructure development and these resources in the public bodies. Drinking water supply sector in Cochin, for example, is undergoing such resource and service deficit. With its enchanting greenery and network of backwaters and rivers, seemingly Kerala is a water plenty State. But despite of 2.5 times higher than national average rainfall i.e., 3000mm, the state experiences water scarcity since 1980 mentions P N Venugopal. With 1855 water supply schemes of Kerala Water Authority operating as of April 2004 and many other schemes financed by HUDCO, Life Insurance Corporation (LIC), Japan Bank for International Cooperation (JBIC), "Jalanidhi"- a 2001 state government initiative funded by a World Bank loan, the Kerala Water Authority is able to provide drinking water to only 20.4 percent households in the state, with 71.9 percent depending on wells, according to the Economic Review 2004<sup>12</sup>.

CDP of Cochin has identified some of the issues regarding the water supply<sup>5</sup>:

1. A huge demand and supply gap due to urban growth.
2. Inadequate public finances to mobilize capital for augmentation of new water supply schemes.
3. High reduction in revenue due to lack of metering, exorbitant illegal connections and Public Stand Posts.
4. Lack of the regulatory mechanism to oversee the functioning of the sector and to fix service standards as well as tariff to meet capital and operating expenditure and the inefficient functioning of the available Government mechanism.

---

<sup>11</sup> Kerala Sustainable Urban Development Project (KSUDP)

<sup>12</sup> P N Venugopal, [Indiatogether.org](http://Indiatogether.org),2006

5. Though all the houses are metered, the working status of the meter is 60%.
6. About 30% of revenue is loss due to the leakage and illegal connections
7. The coastal areas have high density of population and scarcity of good drinking water sources. Proximity to sea renders salinity to the ground water sources and contamination from human habitation together renders the ground water sources useless for any purposes. The pipe water that reaches coastal areas, which lies far at the end from drinking water sources, are infiltrated with dirt and contamination through the worn-out pipe system.

However, the government targets to achieve water supply through pipe system 8 hours a day at 150 litres per capita per day, as per the guide lines of JNNURM in line with Central Public Health and Environmental Engineering Organization (CPHEEO) norms, by 2011 and to achieve the final target of 24 hours a day and seven days a week by 2021<sup>5</sup>, the major question now arises that will the government can succeed in achieving its target with the current pace, resources and policy? Is there any alternative way to achieve these targets on time? Can the local body make use of the private sector capital and expertise to achieve the target? Though the Cochin has realized the benefits of PPP model, the PPP movement is yet to get materialized in urban local bodies. The bottleneck of this is identified as the Municipal and other laws that are made long before the conception of PPP.

According to statistics presented in CDP Cochin, the total water demand in Cochin Corporation, 4 municipalities and 27 Gram Panchayats is 622 million litres per day whereas the total supply is only 225 million litres per day leaving the gap of 397 million litre per day<sup>9</sup>. The CDP Cochin also reveals that Kerala Water Authority is procuring loss in its service. It is spending Rs 3501 lakhs in water supply sector and generating the revenue of Rs 2588 lakhs with a loss of Rs 913 lakhs in the year 2004-2005. The situation was never better in previous years and is worsening<sup>5</sup>. The current water crisis was precipitated as the urbanization shoot up. The total forest area of Kerala has come down from 65% in 1905 to 29% in 2004 which was promoted as a government scheme of "Grow more food" in 1952, uptake of forest land by state's electricity board<sup>12</sup> and other commercial activities. With a march towards globalization and industrialization, it is obvious that we cannot help rapid urbanization. However, urbanization can be organized so that the natural resources are maintained. Various alternative ways can be adopted. Long term vision and plan with effective and practical policy framework is a must for it. But as P N Venugopal mentions, it of course will not be materialized with the unrealistic and outdated data of decades old. It has come to a scene that with donations and loans from international agencies, the government on itself could not meet the demand of drinking water supply. It is now high time to think of alternative ways. For example, Kerala observes two monsoons soaking the state for about 6 months but the 40% of the rainwater is lost through runoff. A very good approach of Kerala Municipality Building Rules in 2004<sup>13</sup> made mandatory for new residential and

---

<sup>13</sup> Kerala government notification

other buildings to have arrangements for rain water harvesting. Now what can be seen here is the construction of the drainage system that collects this rainwater and a water treatment plant that operates to meet the water demand. CDP has identified a desalination plant that works in the coastal regions and produces water at a production cost of Rs 0.05/litre<sup>5</sup>.

### **Importance of Public- Private Partnership:**

Since the public sector is unable to deliver the service with its existing resources and there is very less chances for it to get well equipped with all the necessary resources, there is an obvious need of private party infusion to fill these gaps. There are various modes of private party participation in the process of development and economic growth. Public private partnership (PPP) is considered the most suitable option. It attracts private capital as well as makes use of private sector skills and management expertise to deliver and operate public projects more efficiently over their lifetime. With various forms of PPPs, the ultimate goal is to achieve the better value for money through the exploitation of private sector competencies and the allocation of risk to the party best able to manage it. A public-private partnership could be a better way out in this issue to overcome the insufficiency that the government system is undergoing. This partnership never means to relieve the government off its duties, however, transforms it from its traditional role of an all-rounder as a policy-maker, regulator, financier and service provider to a GUARDIAN who formulates the policy and regulatory framework through a greater reliance on the private sector. Though we are already lagging behind a lot to meet the water supply vision targeted for 2011, we are still optimistic to achieve the vision 2021 provided we adopt SMART (Scientific, Measurable, Attainable, Realistic, Time-bound) alternatives. The involvement of Private sector in the Public service is feared for the mere profit motive of the private sectors and its unwillingness to operate in the sectors where there is high risk of demand and resources. But we have sufficient evidences where private participation can be more efficient in delivering public services. PPP has proven a better approach worldwide and in India to incorporate the private sector in public service purposes.

## **PPP- A Felt Need Model for Sustainable Development:**

“Jalanidhi” is a model of PPP which is a community demand driven project that changed the role of government from direct service delivery to that of the facilitator. The implementation of the project was ensured through a partnership between Kerala Rural Water supply and Sanitation Agency (KRWSA), district project management units, Gram Panchayats, Beneficiary Committee, Beneficiary Groups, Support Organizations mostly Non Governmental Organizations which are recruited through a public process<sup>14</sup>. The study has also revealed that the participation of community in the program helps reducing the corruption and the service becomes more effective. Tamil Nadu government, in 1996, introduced private participation in the collection of solid waste to enhance efficiency and quality of services and bringing in extra required for it. According to the study conducted by Krithika Srinivasan a private company’s performance (in both low and high income, residential and commercial area, etc) in Solid Waste Management was better than that of the corporation’s which is attributed to better equipment, monitoring and supervision systems, younger workers and more stringent enforcement of performance norms for employees. However she has also documented that a remarkable improvement in the quality of corporation’s SWM operation in reference to which she opines that competition improves not only the performance of the private sector but also of the public sector. With an instance of quality service delivery by private sector, she advocates towards a more fruitful partnership between public bodies and private sectors<sup>15</sup>. Of course, in this way we can have a safe way out as complete privatization is a difficult and contentious issue and the complete state responsibility is inefficient enough to meet the requirements.

The privatization mode of Private sector involvement has proven a failure in the sector of Water in India. We have ample of evidences such as Sheonath deal of Chhattisgarh, Nira Deogarh project in Maharashtra to name a few. Showing the lack of government budget, the Maharashtra Krishna Valley Development Corporation turned to privatization which is allowing the private party to play monopoly resulting in the steep increase in the irrigation tariff in order to recover its investment. If unable to recover money from irrigation, tariff will lead to the selling of water to domestic and industrial users at higher rates. This diversion of water away from irrigation defeats the purpose of the projects<sup>16</sup>. Here the major problem identified by the people is about the accountability of the private companies whose primary motive is profit. In case of Sheonath project, when the barrage was built in January 2001, the company prevented villagers from using the river water for irrigation, grazing and fishing. According to the villagers, the administration also backed the company<sup>17</sup>. The campaign and protest against the project prompted Public Accounts Committee to take up the matter which

<sup>14</sup> Kochurani Matthew *et al*,” Beyond Construction- Use by all”

<sup>15</sup> K Srinivasan, Economic and Political Weekly, 2006

<sup>16</sup> S Dharmadhikary, Indiatgether.org, 2007

<sup>17</sup> A P Putul, Down to Earth.

recommended, in 2006-07, the cancellation of Sheonath Privatize Water Supply Project and initiation of criminal proceedings against responsible officials<sup>18</sup>. These instances are an example of lack of proper public policy in incorporation of private sector in public services. Private sector can be involved in various ways in public causes. Public private partnership is one of the most preferable models of private sector involvement in public causes since in such partnership both the public and private bodies are accountable for the success of the project and the delivery of the service to the target groups are ensured. Hence there is an alarming need of policy formulation in direction of private sector partnership in public causes.

Cochin (or the Kerala State) has not come up with concrete Public-Private Partnership policy. It has fallen back to address the Public-Private Partnership in order to involve the private sectors in its mission of Cochin urban development. In fact it should come up with its own framework of PPP guidelines in line of CDP which encourages the private sector to invest in the development projects and public services as well as assures the private sector a commercially viable project and a Guardianship for the successful implementation of the project. "The biggest hurdle in promoting public private partnership (PPP) is the absence of suitable provisions in the State Municipal Laws. The laws require that such services are to be provided by either municipal bodies themselves or their agencies. Our municipal laws lack provisions that permit private sector to provide municipal services"<sup>19</sup>. In Cochin, we still witness the issues in our daily life such as sewage and solid waste management, traffic and transport and water supply. It is now high time to replicate the grand success of nationally applauded Cochin International Airport Limited which is benefitting more than Rs 50 crore a year, in the reform of the city in sectors like traffic and transport, sewage and solid waste management and water supply. These sectors also constitute a part of urban infrastructure. We have ample of evidences where PPPs were a grand success in these minor areas of urban infrastructure. Taking into account of the experiences in the United Kingdom, Northern Ireland and Ireland, we have seen that other sectors of urban development such as education, waste management, water, transport and road sector can also qualify to benefit from the PPP model<sup>20, 21</sup>. However a concrete guideline is necessary to be followed for the success of the project. The guideline may vary with the requirement of the project and the selection of the best suited PPP model. Following the guidelines, Ireland witnessed several successful projects such as five post-primary schools and a National Maritime college in education sector, waste management including waste water treatment plants in Cork, Dublin and Wexford and refuse collection in Dublin and other urban centres<sup>21</sup> to name a few. Cochin can also exploit the model of Public-private partnership in these sectors and witness the success as Ireland and other countries like United Kingdom and Northern Ireland did.

---

<sup>18</sup> Public Account Commission of Chhatisgarh assembly, 2006-07, 64<sup>th</sup> report.

<sup>19</sup> A C Muthiah, Past President, FICCI, 2004

<sup>20</sup> Partnerships UK

<sup>21</sup> Rory Hearne, Irish Research Council for the Humanities and social Sciences (IRCHSS) Scholar, 2005



## **Operational Strategy of PPP:**

However, few of the things are to be taken in consideration while formulating the PPP policy such that it is in real sense a partnership between a public and a private body rather than liberating a partner (i.e., public body) of responsibility and another partner (i.e. private sector) operate in monopoly. A private sector playing monopoly can be as inefficient as a public body. Hence the PPP arrangement must be delivered through specific contracts awarded through competition, rather than by means of joint venture arrangements between the public and private sector<sup>22</sup>.

After a concrete guideline is formulated, a PPP grant fund needs to be established which would assist to initiate the PPP projects. It helps to develop commercially viable projects and ensures that a start-up fund did not inhibit the advancement of such projects. These funds encourage local authorities to be an active part of new form of commercial arrangement with the private sectors. These funds are always an encouragement to the local authorities who are interested in developing innovative projects in partnership with the private sector. However, the project should be assessed in terms of its importance of the service provided, commercial viability, value for money, innovation and replication<sup>23</sup>. The policy framework should also take into consideration the priority areas for the project grants, for example water supply should get the first priority over public transport. The policy framework should clearly state the scope, principles and goals of the PPP programme, project implementation issues, role of partners and stakeholder consultation for the success of PPPs. The Policy Framework should provide general contextual information on PPPs and specific procedural guidance in relation to the delivery of infrastructure using a PPP.

The PPP policy framework should identify and address the issues relevant to the successful implementation of PPPs in different sectors. The policy guidance may however differ as per the requirement for the success of the projects. A group of consultants comprising experts from various academic fields such as social science, law, history, pure and applied sciences, environment sciences; people's representatives, civil society representatives, representatives from public services, supporting organizations etc. are essential to formulate a policy. So, policy formulation is interdisciplinary in nature. However the specific framework may vary with the nature of the projects undertaken and the guidelines is recommended to review every year, a basic guideline is mandatory as a reference. The Irish government has come up with a PPP policy framework for road, water and waster sectors enlisting guidelines for fifteen different concerned issues. They are introduction to Public Private Partnerships, Financial Context, Legal Context, Public Private Partnership Assessment, Statutory Process Assessment, Procurement Procedure Selection, Project Management, Stakeholder

---

<sup>22</sup> Public-private partnership policy framework, Ireland

<sup>23</sup> Policy framework for PPP in Ireland- Evolution of PPP policy in Ireland, Dept. of Environment, Heritage and Local government, 2003

Consultation, Procurement Management, Output Specifications, Risk Assessment, Payment Mechanisms, Key Contractual Issues, Accounting Treatment and Contract and Performance Management<sup>22</sup>. These issues if worked out accordingly to the socio-economic context of Cochin (and of any other city/state) would help to come up with an appropriate policy for each sector of urban reform and development.

The selection of any PPP projects should take into considerations the current budgetary position of the state or country, market demand for particular types of PPP projects, confidence in the competence of private partners, that the value for money is ensured and the public interest is protected. Issues like bankability of the project, statutory risk transfer should be efficiently addressed. Along side among the various models of PPP such as Design and build; Design, build and operate; Design, build, operate and finance, and concession, a relevant and appropriate model needs to be selected with analysis of its benefits and relevance such that the essence of the project is maintained<sup>24</sup>. A series of pilot project is suggested to test the concept<sup>23</sup>. Central PPP unit should facilitate the local PPP unit in these regards which is based mainly on the materials supplied by the Contracting authorities<sup>24</sup>.

## **Conclusion:**

Since the inception of PPP in early 1990s in United Kingdom this model of partnership with private sector has sufficiently contributed in the major infrastructure development worldwide. Cochin has a pride to have the first Indian International Airport built successfully on the PPP model. Cochin has entered a period of economic growth and geared up for urbanization. It is a growing centre for Tourism, Information technology and Port based services. Economic activity is no doubt soaring high up. But there is a threshold. How long the current infrastructure of Cochin will support the economic growth? The increased economic activity will bring into the increase in population. Cochin City is witnessing the higher population growth than the state's average<sup>25</sup>. Increased population will bring with it the increased demands of water supply, accessible public transport, health services, sufficient sewage and solid waste management, spacious roads, so on and so forth. Or else, these demands create havoc and the economic growth is transient. A fast- tracked reform, thus, in the sector of urban components such as water supply, sewage and solid waste management, road and transport sector and health and education is mandatory for sustainable economic growth for a longer period. For the sake of insufficient funds with civic bodies, these sectors of urbanization are still struggling for its upgradation. A complete privatization of these basic public services is not recommended in current situation since the people expect it as a duty of government to whom he pays the tax. Moreover, the profit motive

---

<sup>24</sup> Pricewaterhousecoopers, Ireland

<sup>25</sup> Demography and economic base, CDP, Cochin corporation

of the private sector is feared to discriminate its services between the poor and the rich. As a "panacea for causes such as dearth of funds with the civic bodies and lack of proper service orientation among civic managers"<sup>19</sup> and the mere profit motive approach of full-fledged privatization, intensive PPP can be exploited for the sustainable and organized urbanization of Cochin. Further, this way of partnership could be a way to involve private sector in the nation building mission. After all it is also the responsibility of the private sector to contribute towards the prosperity of the society where it runs its profitable business. This contribution is again never a one-way. The prosperous society directly proportionates the economic growth ultimately benefitting private sector as well, along with the people and public body. PPP can be a better mode to involve private sector in this mission of urban development.

## References:

1. [http://urbanindia.nic.in/moud/programme/ud/speech\\_udm.htm](http://urbanindia.nic.in/moud/programme/ud/speech_udm.htm)
2. <http://jnnurm.nic.in/nurmudweb/toolkit/Overview.pdf>
3. [http://www.pppinindia.com/pdf/guideline\\_scheme\\_IIPDF.pdf](http://www.pppinindia.com/pdf/guideline_scheme_IIPDF.pdf)
4. <http://epw.in/uploads/articles/12556.pdf>
5. <http://www.ksudp.org>
6. <http://www.indiatogether.org/2008/mar/opi-kerala.htm>
7. [http://www.ksudp.org/Downloads/CDPKochi/URBAN\\_INFRASTRUCTURE.pdf](http://www.ksudp.org/Downloads/CDPKochi/URBAN_INFRASTRUCTURE.pdf)
8. <http://hinduonnet.com/businessline/logistic/2001/07/30/stories/0930c05d.htm>
9. <http://www.lsg.kerala.gov.in/htm/CDPKochi/Executive%20Summary.htm>
10. <http://www.ksudp.org/Downloads/CDPKochi/INTRODUCTION.pdf>
11. [http://www.ksudp.org/PDF/AggrementBetweenADB\\_GOK.pdf](http://www.ksudp.org/PDF/AggrementBetweenADB_GOK.pdf)
12. <http://www.indiatogether.org/2006/mar/env-kerwater.htm>
13. <http://www.kerala.gov.in/notifications/lsgd.pdf>
14. [http://www.wateraid.org/documents/ch17\\_preventing\\_corruptionencouraging\\_transparency\\_and\\_accountability\\_in\\_the\\_water\\_and\\_sanitation\\_sector\\_a\\_case\\_study\\_from\\_kerala\\_india.pdf](http://www.wateraid.org/documents/ch17_preventing_corruptionencouraging_transparency_and_accountability_in_the_water_and_sanitation_sector_a_case_study_from_kerala_india.pdf)
15. <http://epw.in/uploads/articles/2167.pdf>
16. <http://www.indiatogether.org/2007/dec/gov-deoghar.htm>
17. [http://www.downtoearth.org.in/full6.asp?foldername=20070531&filename=news&ec\\_id=4&sid=1](http://www.downtoearth.org.in/full6.asp?foldername=20070531&filename=news&ec_id=4&sid=1)
18. [http://www.sandrp.in/watersupply/PAC\\_report\\_recommends\\_cancellation\\_Sheonath\\_Private\\_Water.pdf](http://www.sandrp.in/watersupply/PAC_report_recommends_cancellation_Sheonath_Private_Water.pdf)
19. <http://www.ficci.com/media-room/speeches-presentations/2004/nov/nov1-cityspace-ac.htm>
20. <http://www.partnershipsuk.org.uk>
21. [http://www.fius.ie/Documents/PIUS\\_Vol.2.pdf#page=8](http://www.fius.ie/Documents/PIUS_Vol.2.pdf#page=8)
22. <http://www.ppp.gov.ie/key-documents/guidance/central-guidance/>
23. <http://www.environ.ie/en/Publications/DevelopmentandHousing/PPP/FileDownload,1723,en.pdf>
24. [http://www.pwc.com/ie/eng/about/svcs/corp\\_finance/pwc\\_guide\\_overview.pdf](http://www.pwc.com/ie/eng/about/svcs/corp_finance/pwc_guide_overview.pdf)
25. <http://www.corporationofcochin.net/cdpkochi/02Demography.pdf>
26. [http://www.ksudp.org/Kochi\\_P\\_C.html](http://www.ksudp.org/Kochi_P_C.html)
27. [http://www.cityandfinancial.com/assets/File/Sample\\_Issue6%20WEB\(1\).pdf](http://www.cityandfinancial.com/assets/File/Sample_Issue6%20WEB(1).pdf)
28. <http://www.kerala.gov.in/keralacallfeb04/p36-37.pdf>
29. [http://www.ksudp.org/Downloads/CDPKochi/TRAFFIC\\_TRANSPORTATION.pdf](http://www.ksudp.org/Downloads/CDPKochi/TRAFFIC_TRANSPORTATION.pdf)