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أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

تطبيق شراكة ناجحة بين القطاعين العام والخاص في مجال المياه والصرف الصحي الفلسطيني – الفرص والعوائق

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Applying A Successful Public Private Partnership in The Palestinian Water and Wastewater Sector/ Opportunities and Constraints

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بسم الله الرحمن الرحيم

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Applying A Successful Public Private Partnership in The Palestinian Water and Wastewater Sector/Opportunities and Constraints

وبعد المناقشة التي تمت اليوم السبت 24 رمضان 1436هـ، الموافق 2015/07/11م الساعة الثانية ظهرًا، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

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واللجنة إذ تمنحها هذه الدرجة فإنها توصيها بتقوى الله ولزوم طاعته وأن تسخر علمها في خدمة دينها ووطنها.

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"وَأَرْسَلْنَا الرِّيَاحَ لَوَاقِحَ فَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً فَأَسْقَيْنَاكُمُوهُ وَمَا أَنْتُمْ لَهُ بِخَازِنِينَ"

صدق الله العظيم

سورة الحجر – اية رقم(22)

DEDICATION

I dedicate this thesis to my family, especially…

To the memory of my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake.

To my mother, who taught me that even the largest task can be accomplished if, it is done one step at a time.

To my brothers and sisters who have always supported and encouraged me from near and afar

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ABSTRACT

The Palestinian water and wastewater sector is suffering from a shortage of clean, safe water and inadequate water and wastewater service provision , Public Private Partnership PPPs in developed countries present a successful framework that while engaging the private sector, the role for government in ensuring that social obligations are met and successful sector reforms and public investment achieved. PPPs present a number of recognized advantages for the public sector to exploit. These include the ability to raise additional finance in an environment of budgetary restrictions, make the best use of private sector operational efficiencies to reduce cost and increase quality of services provided to the public and the ability to speed up infrastructure development.

The purposes of this study are to assess the existing conditions that are enabling and disenabling the applying of PPP arrangement in water and wastewater sector in Palestine with focusing on legal, regulatory, and policy framework, institutional framework, technical issues, investment and socioeconomic issues, stakeholders consultation, financing requirements, risk management and managing the interface between public and private partners. , to identify key factors for influencing successful Public-Private Partnerships in infrastructure projects and the constraints and to Present the features of a good relationship management of PPP projects.

The objectives of this study were achieved via a comprehensive literature review, Presenting case studies and finally data collection was conducted via a questionnaire survey with respondents having PPP knowledge and understanding.

The findings show the lack of readiness of water and wastewater sector for implementing large-scale PPP projects and the study recommended according to analysis that the Palestinian Government should take actions for enabling a successful PPP in water and wastewater sector and mitigating the gap which is required for PPP project's development and implementation. The important steps are establishing a sound of legal and institutional framework, develop policies and guidelines , creating a stable environment and conducive to investment with the aim of encouraging private sector investments in the water and wastewater sector, developing a strategic framework for relationship management of PPP projects to enable both public and private sectors to manage these important PPP relationships successfully. developing of an effective ways of interacting and consultation with stakeholders and encouraging donor contribution for sustainable financing structure for PPP projects.

ملخص الرسالة

يعاني قطاع المياه والصرف الصحي الفلسطيني من نقص حاد في المياه النظيفة الآمنة وعدم كفاية خدمات المياه والصرف الصحي. الشراكة مع القطاع الخاص في الدول المتطورة قدمت هيكل ناجح بحيث يكون دور الحكومة هو ضمان تحقيق الالتزامات الاجتماعية ونجاح تطوير قطاع المياه والصرف الصحي وتحقيق استثمارات عالية عند مشاركة القطاع الخاص. تقدم الشراكة مع القطاع الخاص مزايا متعددة للقطاع العام بحيث ممكن استغلالها ، من ضمن هذه المزايا القدرة على توفير تمويل إضافي في بيئة تعاني من قيود على الميزانية ، استغلال افضل لقدرات القطاع الخاص التشغيلية لتقليل التكاليف وتقديم خدمة للجمهور ذات جودة عالية والقدرة على تطوير البنية التحتية.

تهدف هذه الدراسة لتقييم الظروف الحالية التي تمكن او لا تمكن إدارة مشاريع الشراكة القطاع الخاص في قطاع المياه والصرف الصحي الفلسطيني مع التركيز على الهيكل القانوني والسياسات والهيكل المؤسساتي، والقضايا الفنية والاستثمار والقضايا الاجتماعية والاقتصادية، والتشاور مع أصحاب المصلحة ، ومتطلبات التمويل وإدارة المخاطر وإدارة العلاقة بين القطاعين العام والخاص. ، تحديد العوامل الرئيسة التي تؤثر في نجاح الشراكة بين القطاعين العام والخاص في مشاريع البنية التحتية والقيود ، بالإضافة الى عرض لاهم ملامح إدارة العلاقة الجيدة لمشاريع الشراكة مع القطاع الخاص.

اهداف هذه الدراسة قد تحققت بواسطة دراسة موسعة وشاملة لدراسات سابقة، عرض موسع لحالات دراسية وجمع البيانات بتوزيع استبيان على خبراء لديهم معرفة وفهم بموضوع الشراكة مع القطاع الخاص.

اظهرت النتائج عدم جاهزية قطاع المياه والصرف الصحي الفلسطيني لمشاريع شراكة كبيرة مع القطاع الخاص.
واوصت الدراسة وفقا للتحليل على ان الحكومة الفلسطينية يجب ان تتخذ اجراءات لتمكين شراكة ناجحة والتخفيف من الفجوة لتنفيذ وتطوير شراكة ناجحة مع القطاع الخاص في قطاع المياه والصرف الصحي الفلسطيني ومن اهم الخطوات تطوير هيكل قانوني ومؤسساتي وتطوير السياسات والشروط المرجعية ، خلق بيئة مستقرة ومواتية للاستثمار بهدف تشجيع استثمارات القطاع الخاص في قطاع المياه والصرف الصحي، تطوير هيكل استراتيجي لإدارة العلاقة لتمكين كلا القطاعين العام والخاص من إدارة ناجحة لهذه العلاقة الهامة ، تطوير طرق فعالة للتفاعل والتشاور مع أصحاب المصلحة وتشجيع الجهات المانحة للمساهمة في هيكل تمويل مستدام لمشاريع الشراكة مع القطاع الخاص.

Table of Content

List of Tables:

List of Figures:

Glossary of Terms

ANOVA	One way Analysis of Variance
BLT	Build Lease Transfer
BOO	Build Own Operate
BOT	Build Operate Transfer
BOOT	Build Operate Own Transfer
BTO	Build Transfer Operate
BRT	Build Rent Transfer
CBO	Community Based Organization
CMWU	Coastal Municipal Water Utility
CSFs	Critical Success Factors
DBFO	Design Build Finance Operate
DBO	Design Build Finance Operate
EIP	European Investment Bank
IWA	Israel Water Authority
IWE	Institute of water and environment
GDP	Gross Domestic Product
GEWP	Gaza Emergency Water Project
Km	Kilometer
LEKA	Lyonaise Des Eaux/ Katib and Alami
m3	Cubic meter
MC	Management Contract

MENA	Middle East and North Africa
MEDRC	Middle East Desalination Research Center
MIGA	Multilateral Investment Guarantee Agency
MOF	Ministry of Finance/Israel
MW	Megawatt
MWI	Ministry of Water Irrigation -Jordan
NGO	Non-Governmental Organization
OCHA	Office for the Coordination of Humanitarian Affairs
OPT	Occupied Palestinian Territories
PHG	Palestine Hydrology Group
PLO	Palestinian Liberation Organization
PMU	Project Management Unit
PPP	Public Private Partnership
PSP	Private Sector Participation
PWA	Palestinian Water Authority
RC	Regional Coordinators
RLT	Rehabilitate Lease Transfer
ROT	Rehabilitate Operate Transfer
SC	Steering Committee
Sig	P Value
SPC	Samra Project Consortium
SPV	Special Purpose Vehicle

SPSS	Statistical. Package for Social Sciences
SWWTP	Samra Wastewater Treatment Plant
SWRO	Sorek Sea Water Reverse Osmosis
TCT	Technical Counterpart Team
UN	United nations
UNRWA	United Nations Works & Relief Agency
UNDP	United Nations Development Programme
UNICEF	United nations children fund
US$	United Estates Dollar
WAJ	Water Authority of Jordan
WHO	World Health Organization

CHAPTER (1)

GENERAL FRAMEWORK

1.1 Background

1.2 Research Problem

1.3 Research Variables

1.4 Research Hypotheses

1.5 Research Objectives

1.6 Research Importance

1.1 Background:

For many years, the Palestinian population of the West Bank, including East Jerusalem, and the Gaza Strip, has suffered from a shortage of clean, safe water **(Scobbie, 1997).**

The water sector in Palestine is characterized by highly over exploitation of damageable-shared water resources, exhaustion of long-term storage, deterioration of water quality an increasing levels of demand driven by high population growth and accompanied by decreasing per capita supplies **(Abouali, 1998).**

Amensty (2009) illustrates that for more than four decades of occupation of the Palestinian territories Israel has overexploited Palestinian water resources, neglected the water and sanitation infrastructure and used the Palestinian territories as a dumping ground for its waste causing damage to the groundwater resources and the environment**.** Therefor the Palestinians suffer from exceptional circumstances under the Israeli occupation that denies their rights and restricts their access to water resources.

This struggle that the Palestinians face within the water supply process is continuously increasing under the growing population and water demands **(PWA, 2012)**.

The region has three main sources of natural fresh water; the Jordan River, the Mountain Aquifer and the Coastal Aquifer, Since Israel occupied the West Bank in 1967, it has denied its Palestinian inhabitants physical access to the riverbanks and to their 'equitable and reasonable share' of the Jordan River's water resources.

The Mountain Aquifer's water resources are currently under near exclusive Privileged use by Israeli wells and Jordan Valley settler wells. 1.6 million Palestinians living in the Gaza Strip are dependent on extraction from the southern end of the Coastal Aquifer. The over-extraction of theCoastal Aquifer and pollution have resulted in a progressive deterioration of the water quality in the Gaza Strip (**AL-HAQ, 2 0 1 3).** With access to a mere 11 per cent of the Mountain Aquifer's resources, a quarter of total extractions from the shared Coastal Aquifer, and no access to surface water, Palestinians in the OPT only have access to 10 per cent of all available water in the region **(Al-HAQ, 2013).**

The Palestinian Government has already started to focus on development of new water resources (non-conventional water resources including desalination of brackish ground water, desalination of seawater which it is mainly in Gaza Strip, Ruse the treated wastewater and purchasing water from Israel) , in addition to focusing on a new tools and arraignments in water management. One of the strategic options is involving the private sector in participating in water and wastewater service provision which have been successfully implemented as a global trend as a source of drinking water and wastewater reuse for agriculture to provide a water and wastewater sustainable services to the citizen with high quality and reasonable price **(PWA, 2014 a).**

Although the legislative framework is not conducive of such partnerships, in addition to the lacking capacities within the sector, the fragmented institutional setup and

the political uncertainties and insecurities on the ground. Nevertheless, two management contracts were awarded in the West Bank

(Bethlehem in 1999), and Gaza (in 1996). In 2002 The Bethlehem contract was terminated after the outbreak of the Second Intifada, while the Gaza contract expired after two one year renewal periods **(ACWUA, 2014).**

The Gaza Management first private Contract, one of the sector initiatives in the Middle East water sector, used an innovative contracting out strategy to overcome the limitations posed by weak local regulatory capacity. More than two years after the award of the contract the water supply system is much improved.

The Management contract "Gaza I project" will be reviewed and discussed in details with lessons learned in Chapter (3) of the study.

The Palestinian Water Authority (PWA) which was created in 1995, through a Presidential decree (N° 2/1996), to regulate the water sector, improve and sustain water resources, and to undertake planning and monitoring service delivery provision , the roles and responsibilities of the main water institutions in the water sector are detailed in the 2002 Water Law No 3. In general, the Water Law lacks clarity as it neglects to define the exact nature of and relationships between the sector institutions **(PWA, 2014 b).**

PWA began working on reversing the situation and requested independent bodies to conduct assessments on the reality of the water sector and factors which influence it and had developed an "Action Plan for Reform" towards the definition and implementation of a comprehensive program of institutional and legislative reform in the Palestinian water and wastewater sector. The reform including the reorganization of the water sector and the institutions within, capacity building, and the revision of strategies and policies, when necessary, as a result of any change that takes place in the architectural arrangement of the sector, this plan have been endorsed by Cabinet of Ministers of the Palestinian National Authority On December 14th 2009, The reform structured opportunities for greater private sector engagement through various business models to achieve different goals:

1) Enhance upgrading the efficiency of water use and consumption and enhance the efficiency of operation and maintenance.
2) 2-Encourage the private sector to invest and to participate activity in the national economy.
3) Job Creation.
4) Rationalizing of public expenditures **(PWA, 2014 a).**

This study will focus on the challenges and constraints facing the applying PPP in Palestinian water and wastewater sector with more private sector involvement since the water and wastewater needs a large investment for (a) building new facilities, (b) the refurbishment of old facilities and (c) permanent water system renewal. According to the **PWA (2014 a)**,

The total estimated investment needed to improve water services (2017-2032) is in United States Dollars (US$) 2201 Million and total estimated investment needs to improve

wastewater services (2017-2032) is US$ 4342 Million . It is not possible for the government to single handedly raise this capital by the year stated from within the current macro-economic environment.

1.2 Research Problem:

There is a growing demand in Palestine for the acceleration of infrastructure development and the improvement of service delivery in order to meet the ever-growing needs of its populace. **Water Law (2014)** lists the responsibilities of the water authority and one of these duties is to "cooperate with the relevant authorities in creating a climate that is stable and conducive to investments with the aim of encouraging private sector investment in the water sector, and implement required institutional, regulatory and economic reforms to encourage partnership with the private sector".

Success of such PPP arraignment especially in implementing and managing large-scale water and wastewater facilities in many developing countries depends on many critical factors such as political, environmental, Socio-economic as well as legal and regulatory frameworks.

There are many national and international public-private partnerships past histories and project experiences to highlight factors critical to the success of future projects.

However, no comprehensive study exists to contemplate and measure all of the various factors leading to an effective PPP project execution in Palestine and all the challenges facing implementing sea desalination plants and wastewater treatment plants with high involvement of private sector.

The problem of this research can be summarized in the following main question:

***Main Question*:** What are the challenges facing the applying of a successful PPP on Palestinian water and Wastewater sector and the conditions that enabling a successful PPP to improve the provided services to the Palestinian community with the high quality and affordable price?

1.3 Research Variables:

- ***The dependent Variable***: Applying a successful PPP in Palestinian water and wastewater sector.

- ***The Independent Variables*:**

- Technical issues
- legal, regulatory, and policy framework
- Institutional and Capacity Status.
- Investment framework

- Socioeconomic framework.
- Stakeholders Consultation
- Financing Requirements
- Risk Management
- Managing the interface between public and private partners

1.4 Research hypotheses:

The main hypothesis for this research are:

1- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Legal and regulatory Framework on the applying a successful PPP in Palestinian water and wastewater sector .

2- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Institutional framework on the applying a successful PPP in Palestinian water and wastewater sector.

3- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Technical Issues on the applying a successful PPP in Palestinian water and wastewater sector .

4- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Risk Management on the applying a successful PPP in Palestinian water and wastewater sector.

5- There is a high statistical significant effect at significant level $\alpha \leq 0.05$for Investment framework on the applying a successful PPP in Palestinian water and wastewater sector.

6- There is a high statistical significant effect at significant level $\alpha \leq 0.05$for Socioeconomic framework on the applying a successful PPP in Palestinian water and wastewater sector .

7- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Consultation with Stakeholders on the applying a successful PPP in Palestinian water and wastewater sector.

8- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Financing Requirements on the applying a successful PPP in Palestinian water and wastewater sector.

9- There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for managing the interface between public and Private sector on the applying a successful PPP in Palestinian water and wastewater sector.

10- There are significant differences at significant level $\alpha \leq 0.05$ in the responses of the research sample due to the following personnel information (Type of your organization, Field of Specialist, Qualification and Years of Experience).

1.5 Research Objectives:

The general purpose of this research is to assess the readiness of Palestinian water and wastewater sector for applying public private partnership and encouraging private sector investment in the water sector,

identify key factors for influencing successful Public-Private Partnerships and the associated challenges and Present the features of a good relationship management of PPP projects for better managing the partnerships and relationships in PPP, and to improve PPP performance.

The specific objectives are to:

- Study different models of PPP in water sector with strength and weaknesses of each, the benefits for public and private sector.
- Assess the existing conditions that are enabling and dis-enabling the applying of PPP arrangement in water and wastewater sector in Palestine.
- To identify key factors for influencing successful Public-Private Partnerships in infrastructure projects and the a constraints .
- Study the main types of risks and how to allocate them to the party who can best assume them in the most cost effective manner.
- Present the features of a good relationship management of PPP projects.
- To get recommendations that could help the concerned bodies in applying PPP in water and wastewater sector.

1.6 Research importance:

Water and Wastewater sector is a very related sector to people life and the PWA strategy aims to improve customer satisfaction, providing customers with access to a reliable, permanent source of good quality tap water, at an affordable price. More researches are now needed to find adequate solutions for the sustainable management and development of water resources, water and waste water service provision. and when having completed this research study, it can be said to have made the following main

contributions :

– This research is very important where it will give a chance to study and evaluate best convenient PPP models and the enabling conditions for a successful PPP in Palestinian water and waste water sector for a high quality water and wastewater service provision.
– The study is a deliberate attempt to explain how private sector management techniques can be infused into the public sector to develop a strategic framework of relationship management for PPP projects, for better managing the partnerships and relationships in PPP, and to improve PPP performance in large-scale water and wastewater projects.
– The study could be valuable to PWA at this stage, since PWA is starting to develop a proper policies and regulations to encourage the private sector to participate strongly in water development programs.
– It is also important for researchers who will search on PPP arraignment in future to take the benefit from research results and recommendations.

CHAPTER 2

LITERATURE REVIEW OF PPP IN WATER AND WASTEWATER SECTOR

2.1 Introduction

2.2 PPP definition and concept

2.3 Worldwide application of PPP

2.4 Different types of PPP

2.5 Benefits Associated with PPP and disadvantages

2.6 Critical Success Factors

2.7 Constraints Implementing PPP

2.8 Enabling Environment for a successful Partnership in Water and wastewater Sector.

2.8.1 Technical Issues

2.8.2 Legal, Regulatory and Policy Framework

2.8.3 Institutional Framework

2.8.4 Investment framework.

2.8.5 Socio-Economic Framework

2.8.6 Stakeholders Consultation

2.8.7 Financing Requirements

2.8.8 Risk Management

2.8.9 Managing the interface between Public and Private in PPP projects

2.1 Introduction

In recent years, there has been a significant increase in private sector participation (PSP) in the delivery of urban water supply and wastewater in developing countries **(Johnstone, Wood & Hearne, 1999)**, the interest is growing in PPPs, in particular due to the growth in the demand for infrastructure services, limited public funds to meet current and future needs and acceptance of private sector in the provision of infrastructure **(Herpen, 2002)**.

PPP have considered as a one of the main approaches for delivering infrastructure projects if properly formulated and managed **(Kwak, Chih & Ibbs, 2009)**. This is largely attributable to a perception that governments have been unable to manage the sector efficiently and do not have the funds required to undertake much needed investments **(Johnstone et All, 1999)**.

This chapter reviews various definitions and types/models of PPP worldwide. Following this, Presents relatively the benefits associated with PPP and disadvantages, Critical success factors for PPP in water and wastewater sector and the associated constrains. Study the main conditions and factors that enabling environment for a successful partnership in water and wastewater sector that the government should take in consideration in the planning stage of PPP process focusing on Technical Issues, legal, regulatory and policy framework, Institutional framework, Investment framework, Socio-economic framework, Stakeholders Consultation, Financing Requirements, Risk Management and Managing the interface between Public and Private in PPP projects.

2.2 PPP definition and concept

Even with the wide adoption of PPP which are found in many different types and sizes, and the boundaries between public and private are sometimes blurred, which makes public-private partnerships (PPPs) difficult to classify and to clearly define **(Johnstone et All, 1999 ;Ouyahia, 2006)**.

Several definitions of PPPs have been used by different scholars, governments, and international organizations as summarized in Table (2.1) **Regan (2005)** defines the PPP as "Public private partnerships (PPPs) refer to arrangements for the procurement of goods and services utilizing franchising and similar arrangement with the Private sector; the private sector is contracted to provide public goods and services on behalf of government".

Table (2.1): Various Definitions of PPP

Source	Definition
HM Treasury	An arrangement between two or more entities that enables them to work cooperatively towards shared or compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of resources, shared risk taking, and mutual benefit.
The World Bank	The term "public-private partnerships" has taken on a very broad meaning. The key elements, however, are the existence of a "partnership" style approach to the provision of infrastructures opposed to an arm's-length "supplier" relationship…Either each party takes responsibilities for an element of the total enterprise and they work together, or both parties take joint responsibility for each element…A PPP involves a sharing of risk, responsibility, and reward, and it is undertaken in those circumstances when there is a value-for-money benefit to the taxpayers.
European Commission	A partnership is an arrangement between two or more parties who have agreed to work cooperatively toward shared and/or compatible objectives and in which there is shared authority and responsibility; joint investment of resources; shared liability or risk-taking; and ideally mutual benefits.
Canadian Council for Public Private Partnerships	PPP is 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.

Source: (Kwak et all, 2009)

Despite the lack of one international common definition describing what PPP projects are, there are some key elements which normally characterize them, such as:

- A long-term relationship, involving a cooperation between a public partner and a private Partner working cooperatively towards shared or compatible objectives in return for payments either directly from the users of the infrastructure or from a governmental body.
- The method of funding the projects, mostly by private partners. However public funds might be added to the private funds.
- The public entity concentrates mostly on defining the objectives to be achieved in the term of public interest, it is responsible for the quality of the provided services and pricing policy, additionally it takes responsibility for monitoring the project.
- The private partner is usually responsible for the stages in the project like design, completion, implementation and funding.
- Risk allocation between both parties – public and private. Usually risks are being transferred from the public entity to the private partner. Nevertheless, it does not mean that the private partner always bears all risk, depending on who can better reduce them and increased value is achieved through the exploitation of private sector skills and competencies **(Ibid, P.3).**

PPPs are often confused with privatization. There is a clear difference between the two forms of private sector participation concepts . Privatization involves the permanent transfer of a previously publicly owned asset by total or partial sale to the private sector, this form of private sector participation is most common and more widely accepted in sectors that are not traditionally considered public services, such as manufacturing, construction, etc. **(Farquharson, de Mästle, Yescombe & Encinas, 2011; ADB, 2008).**

Savas (2005) provided in his paper general definition that captures the broad essence of the practice and leads to various implementation techniques, " Privatization is the act of reducing the role of government or increasing the role of the private institutions of society in satisfying people's needs; it means relying more on the private sector and less on government."

2.3 Worldwide application of PPP

During the past two decades, PPP have become main schemes for delivering public services in both developed and developing countries. Between 1985 and 2004, there was a total of 2096 PPP projects worldwide with a total capital value of nearly US$887 billion (AECOM Consult, 2005).

The primary drivers are similar everywhere, in both developed and undeveloped countries: the need for infrastructure investment and operational improvement is high, and governments are less willing or able to supply the necessary capital and expertise. This creates a need both for efficiencies in operation and investment, and for additional sources of investment (CCPPP, 2011).

PPPs are not applied equally to all infrastructure sectors. In most countries, PPP projects focus on transportation projects such as roads, bridges tunnels, railroads, and airports. However, the use of PPPs has been expanded across various sectors in recent years **(Kwak et all, 2009).** In the field of PPP development table (2.2) indicates the costs involved with PPP projects that have been planned and funded worldwide between 1985 and 2000.The table shows that PPPs are widely used all over the world, with over 30% of the PPP projects located in Asia and the far East and a mere 6% in Africa.

Table(2.2):Planned and Funded PPP Projects by Geographical Area

Geographical Area	Projects		Cost	
	No.	%	US$B	%
North America	396	18.9	93	10.3
Latin America	474	22.6	125	13.8
Europe	371	17.7	216	23.8
Africa and Mid-East	125	6.0	40	4.4
Asia and Far East	732	34.9	433	47.7
Worldwide	2 098	100.0	907	100.0

Data source: KPMG LLP, Canadian Forum on Public Procurement, 2001

The statistics presented in Table (2.3) indicate that over 46% of the world's PPP projects were relative to with the transportation sector, compared to 33% relative to the

power sector, and 20% relative to the water sector. The global number of PPP projects in the urban water/sewerage subsector reaching financial closure increased more than tenfold between 1990 and 1997, reaching a cumulative capital expenditure of US$25 billion in 1997 **(Gisele, Nicola & Yesim, 1998) .** Other statistics indicates that PPPs have now spread across the globe, 134 developing countries implemented new PPP projects in infrastructure alone between 2002 and 2011 **(WBG, 2012).**

Table (2.3): Planned and Funded PPP Projects by Sector.

Sector	Projects	Cost	
	No.	US$ B	%
Roads and Rail	699	443	33.3
Airports and Sea Ports	280	103	13.4
Water and Wastewater	422	58	20.1
Power	697	303	33.2
Total	2098	907	100.0

Data source: KPMG LLP, Canadian Forum on Public Procurement, 2001

ACWUA (2014) emphasizes that in the Arab region, PPPs are not a new concept. Historically, projects financed via private participation were referred to as concessions, build-operate-transfer projects or similar models which fit under the PPP umbrella. A framework supportive of PPP is available in Morocco, Egypt, Yemen, Jordan and Lebanon and Syria, which has very recently started entertaining and considering PPPs for infrastructure projects, all other countries have been looking to implement such

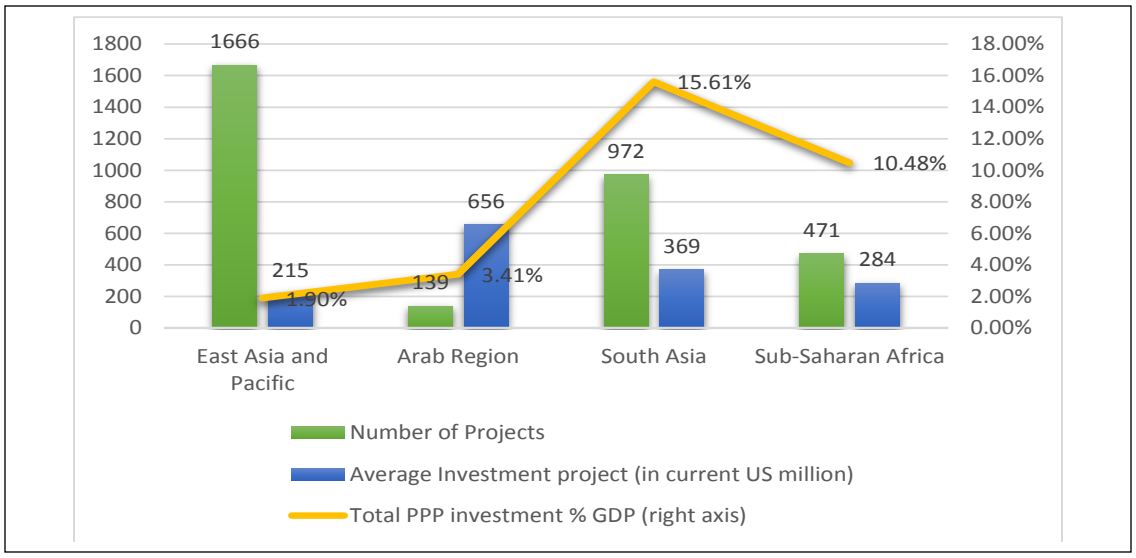

Figure (2.1): Total investment commitments to PPP projects and number of projects in selected developing regions, 1990-2012

Source: World Bank and PPIAF, Private Participation in Infrastructure Projects Database; and ESCWA staff calculations

Partnerships and engage the private sector in the development and management of the sector. Figure (2.1) presents a breakdown of the total investment commitments and the number of PPP projects during the las twenty years in selected developing regions.

Despite the limitations of comparisons between developing regions and Figure (2.1) sheds the lights on the relative success of different regions in attracting private investment to infrastructure development and engaging with PPPs to deliver public services and shows that during the period of 1990- 2012, the Arab region had fewer infrastructure projects than other developing regions, across the sectors of energy, telecommunications, transport, and water and sanitation. Total investment for the region was also the lowest, at US$91.1 billion**.(ESCWA, 2013).**

The majority of PPP projects were clustered in the telecommunications and energy sectors (figure 2.2).

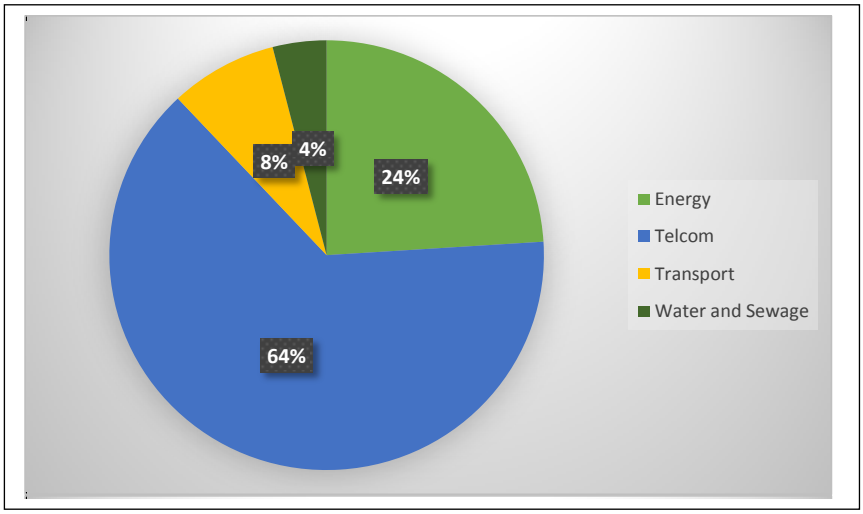

Figure (2.2): Total PPP investments commitments by sector in the Arab region, 1990-2011

Source: World Bank and PPIAF, Private Participation in Infrastructure Projects Database

2.4 Different types of PPP

Various types of partnerships have been implemented to reflect different project objectives and requirements. These PPPs vary in terms of the degrees of private involvement **(World Bank, 2007).**

PPP process is extremely dynamic and that the details of most arrangements are suitable to the circumstances involved. Each project will define what is suitable and what is required **(European Commission, 2003)**. The main categories of private sector participation can be distinguished by the way in which they allocate responsibility for controlling components of the water system or performing activities, the level of risk

transferred to the private sector, by their duration, and by their need for institutional changes **(Local Government Association of South Australia, 2002)**

Figure (2.3) describes a spectrum of possible relationships between public and private actors for the cooperative provision of services.

The following sections present various forms of PPP relationships moving from minimal to maximal private sector involvement to understand the main features characteristics.

2.4.1 Service Contracts

Under this arrangement a government agency contracts with a private firm to provide a specific service for a specified period of time generally for a few months up to a few years **(Rondinelli)**.

With service contracts management and investment responsibilities remain strictly with the public sector.

The public client simply purchases a professional service outside instead of trying to perform it through its own organization **(World Bank, 2007)**.

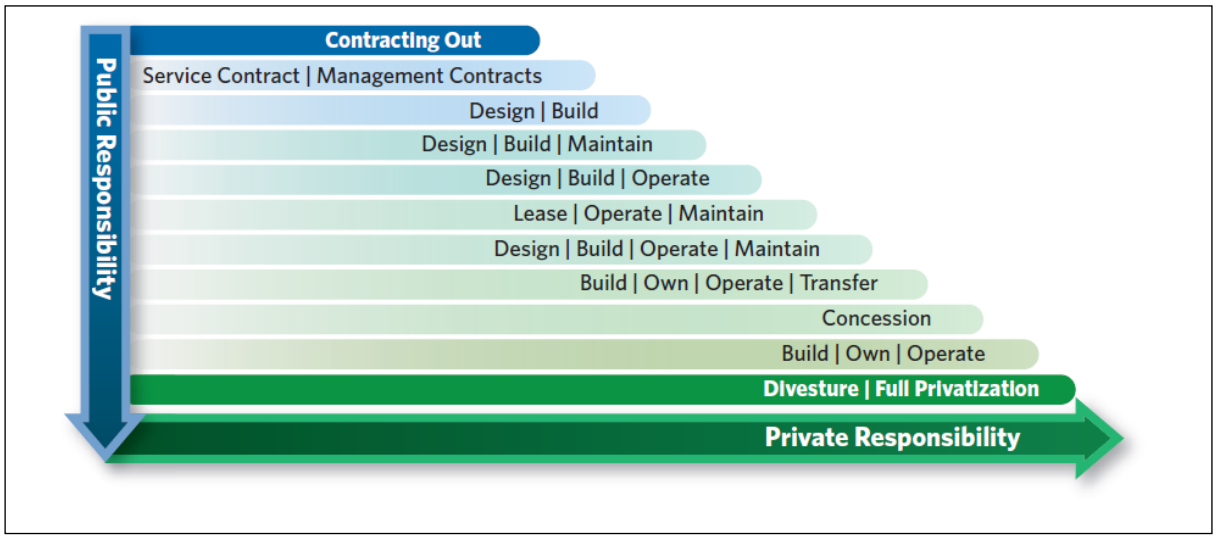

Figure (2.3): The spectrum of public-private partnerships .Palmer ,G (2009)

2.4.2 Operation and Management Contracts

With management contracts the private sector is responsible for all aspects of operation and maintenance.

The contracts extend for longer periods than service agreements often for three to five years and do not usually require any private investment, the private company does not assume commercial risk, and does not have any direct legal relationship with the consumer.

Contractors can be paid either on a fixed fee basis, or on an incentive basis where they receive premiums for meeting specified service levels or performance targets, the responsibility for investment decisions and the ownership of the facility remains with the public authority **(World Bank, 2007; Johnstone et All, 1999; European Commission, 2003).**

Management contracts transfer greater authority for operational decision-making to the private sector than service contacts with the empowerment to change how operational objectives are met, allow the private sector to develop improvements in efficiency and technical ability **(CCPPP, 2001).**

2.4.3 Turnkey Contracts

Also known as Design-Build. The Basic concept is that private contractor designs and builds a facility for agreed price and specified time **(Woss, 2008)**. The contractor assumes risks involved in the design and construction phases. **(UNESCAP, 2007).** In water sector for example a desalination plant would typically be procured by means of a Turnkey contract, a version of design and build. The name derives, obviously, from the contractor's obligation to provide all work, materials and services necessary to enable the client to turn the key and take over an operational facility **(Barker, 2004)**

2.4.4 Affermage-leases

Lease and affermage are both arrangements under which the operator is responsible for operating and maintaining the business but not for financing the investment **(World Bank, 2007).**

Under a lease, the operator retains revenue collected from customers and makes a specified lease payment to the contracting authority, Under an affermage, the operator pays the contracting authority an affermage fee which is an agreed rate per every unit sold and varies according to demand and customer tariffs, and retains the remaining revenue. The affermage can be more appealing to the private partner as it reduces some risks associated with low-cost recovery in sales **(World Bank, 2007; ADB, 2008)**.

The responsibility for planning and financing overall investment and expansion programs remains with the public sector owner. Lease agreements may extended for a period of five to fifteen years.

They are suitable only for infrastructure systems that generate independent revenue streams. **(European Commission, 2003)**.

2.4.5 Build–Operate–Transfer (BOT) and Similar Arrangements

Mechanisms that The private partner provides the capital required to build the new facility, The private operator owns the assets for a period set by contract sufficient to allow the developer time to recover investment costs through user charges and after the ownership reverts back to the public sector **(ADB, 2008)**.

BOT contracts present a relatively lower level of risk for the operator because the government pays the operator a contractual amount no matter what happens in terms of water service delivery **(World Bank, 2007)**.

Operating and investment risks can be substantially transferred to the private sector **(UNESCAP, 2007).**

In a BOT concession, often the concessionaire may be required to establish a Special Purpose Vehicle (SPV) for implementing and operating the project. The SPV may be formed as a joint venture company with equity participation from multiple private sector parties and the public sector **(UNESCAP, 2007)**.

There are numerous variants of BOT, table (2.4) summarize some of these variants with its features.

Table (2.4): BOT Variants

Variants	Authors	Features
Design-Build-Operate (DBO)	Kelly, Haskins, and Reiter, 1998 World Bank,2007	The private sector is responsible for the design, construction, operation, and maintenance of a project for a specified period prior to handling it over to the public sector. the public and private sectors share responsibility for capital investments.
Design-Build-Finance-Operate (DBFO)	U.S. Department of Transportation	The private sector is responsible for the finance, design, construction, operation, and maintenance of a project. The public sector retains full ownership over the project.
Build-Own-Operate (BOO)	Chege and Rwelamila, 2001, World Bank,2007	The assets remain indefinitely with the private partner, the government only agrees to purchase the services produced for a fixed length of time.
BOOT contracts	Johnstone et all, 1999 STEDS, 2002	BOOT contracts - are mechanisms that allow a private contractor to Build, Own, Operate, and Transfer a specific capital investment. Usually, the investment is quite substantial and the contract period is long enough to allow for the recuperation of capital expenditure. the public authority must guarantee a certain demand, such as a volume to be treated. The contractor accepts a risk if this demand is not met BOOT contracts are used for the provision of capital works where finance comes entirely or mainly from the contractor, who then earns his return through operation over a period of years.

Variants	Authors	Features
Rehabilitate-Operate-Transfer (ROT)	Beery& Crow,2003	Project in which a private developer rehabilitates an existing facility at its own risk, and then operates and maintains the facility at its own risk for a given period.
Build, Transfer and Operate (BTO)	Beery &Crow, 2003	A turnkey project whose ownership is immediately transferred to public sector, but which is managed by a private operator.
Build, Rent or Lease and Transfer (BLT or BRT)	Beery &Crow, 2003	A project in which a private developer builds a new facility at its own risk, leases that facility from its government owner, and then operates and maintains the facility for a given period.
RLT (Rehabilitate, Lease or Rent, Transfer)	Beery &Crow, 2003	project in which a private developer rehabilitates an existing facility at its own risk, leases or rents the facility from the government owner, and then operates and maintains the facility at its own risk for a given period.

2.4.6 Concessions Contracts

These agreements enable a private investment partner to finance, construct, and operate a revenue generating infrastructure improvement in exchange for the right to collect the associated revenues for a specified period of time of 25 to 30 years, or even longer, under a concession approach the ownership of all assets, both existing and new, remains with the public sector. Concessions can be awarded for the construction of a new asset or for the modernization, upgrade, or expansion of an existing facility **(World Bank,2006; European Commission,2003).**

2.4.7 Divestitures

A divestiture gives the private operator full responsibility for operations, maintenance, and investment.

But unlike a concession, under a divestiture legal ownership of the assets rests with the private operator.

Divestiture is another word for sale of assets to a private operator, that is, full privatization. However, although the difference between a concession and a divestiture may at first look considerable, the main rights and obligations of the contracting authority and the operator can be similar under the two arrangements **(World Bank, 2006; European Commission,2003 ; World Bank, 2007).**

2.4.8 Joint Venture

Joint ventures are alternatives to full privatization in which the infrastructure is co-owned and operated by the public sector and private operators. Under a joint venture, the public and private sector partners can either form a new company or assume joint ownership of an existing company through a sale of shares to one or several private investors. The government is the ultimate regulator, but it also is an active shareholder in the operating company. From this position, it may share in the operating company's profits and help ensure the wider political acceptability of its efforts. The private sector partner often has the primary responsibility for performing daily management operations. Under the joint venture structure, both public and private partners have to be willing to invest in the company and share certain risks **(ADB,2008 ; UNDP/PPPUE & YALE, 1999)**

Each model of PPP has its potential strengths and weaknesses, Table No. (2.5) reviews the PPP option and describes the main characteristics of these different procurement arrangements.

Table no. (2.5): Summary of Key features of the basic forms of Public Private Partnership (PPP).

	Service Contract	Management Contract	Lease Contract	Concession	BOT
Scope	Multiple contracts for a variety of support services such as meter reading, billing, etc.	Management of entire operation or a major component	Responsibility for anagement, operations, and specific renewals	Responsibility for all operations and for financing and execution of specific investments	Investment in and operation of a specific major component, such as a treatment plant
Asset Ownership	Public	Public	Public	Public/Private	Public/Private
Duration	1–3 years	2–5 years	10–15 years	25–30 years	Varies
O&M Responsibility	Public	Private	Private	Private	Private
Capital Investment	Public	Public	Public	Private	Private
Commercial Risk	Public	Public	Shared	Private	Private
Overall Level of Risk Assumed by Private Sector	Minimal	Minimal/moderate	Moderate	High	High
Compensation Terms	Unit prices	Fixed fee, preferably with performance incentives	Portion of tariff revenues	All or part of tariff revenues	Mostly fixed, part variable related to production parameters
Competition	Intense and ongoing	One time only; contracts not usually renewed	Initial contract only; subsequent contracts usually negotiated	Initial contract only; subsequent contracts usually negotiated	One time only; often negotiated without direct competition
Special Features	Useful as part of strategy for improving efficiency of public company; Promotes local private sector development	Interim solution during preparation for more intense private participation	Improves operational and commercial efficiency; Develops local staff	Improves operational and commercial efficiency; Mobilizes investment finance; Develops local staff	Mobilizes investment finance; Develops local staff
Problems and Challenges	Requires ability to administer multiple contracts and strong enforcement of contract laws	Management may not have adequate control over key elements, such as budgetary resources, staff policy, etc.	Potential conflicts between public body which is responsible for investments and the private operator	How to compensate investments and ensure goodmaintenance during last 5–10 years of contract	Does not necessarily improve efficiency of ongoing operations; May require guarantees

Source: Heather Skilling and Kathleen Booth. 2007.

2.5 Benefits Associated with PPP and disadvantages

Many developing countries are searching positive impacts on the efficiency, equity and quality provision of the public services through increasing competition and active participation of the private sector, considering PPP **(Pessoa, 2006)**. According to the **World Bank (1997)** a government's prime objectives in inviting the private sector to participate in water sector supply and wastewater are primarily to:

- Bring technical and managerial expertise and new technology into the water sector.
- Improve economic efficiency in the sector in both operating performance and the use of capital investment and the use of capital investment.
- Inject large-scale investment capital into the sector or gain access to private capital markets.
- Reduce public subsidies to the sector or redirect them from the sections of the populaces currently served to the poor and those without access to services.
- Insulate the sector from short-term political intervention in utility operations and limit opportunities for interventions by powerful interest groups.
- Make the sector more responsive to the customer needs and preferences

Despite the PPP broad benefits through the participation of private sector in water service delivery through PPP arrangements also there is a potential disadvantages are enumerated in different literature and international organization reports.

2.5.1 Potential Benefits

There is a growing realization that cooperation with the private sector, in PPP projects is able to offer a number of advantages mentioned in several studies and papers as follows:

- Improved quality and efficiency of service provision: PPP can improve the quality and efficiency of infrastructure services by increase competition and efficiency in service provision, expand coverage, and reduce delivery costs **(European Commission, 2003 ;Kwak et All, 2009)**
- Faster implementation : Private sector capacity and flexibility are seen to be superior to the public sector, and PPPs therefore allow projects to be finished more quickly and on schedule **(European Commission, 2003 ; IISD report, 2012)** Increased investment in public infrastructure: Governments are able to implement projects more frequently and on a larger scale because the private sector finance element reduces its need to raise or budget additional funds **(IISD report, 2012).**
- Better risk allocation : Allocation of risk the aims to optimize rather than maximize risk transfer to the organizations that can most effectively manage it to ensure that best value is achieved **(European Commission, 2003 ; Kwak et All, 2009).**
- Exploring PPPs as a way of introducing private sector technology and innovation in providing better public services through improved operational efficiency **(European Commission, 2003 ; Canadian Council for PPPs, 2001).**

- Enhanced public management by transferring responsibility for providing public services government officials will act as regulators and will focus upon service planning and performance monitoring instead of the management of the day to day delivery of public services **(European Commission, 2003).**
- Increase the "value for money" spent for infrastructure services by providing more-efficient, lower-cost, and reliable services (Kwak et All, 2009 ; IISD report, 2012)
- Better incentives to perform : allocation of project risk should incentive a private sector contractor to improve its management and performance under most PPP projects (European Commission, 2003).
- Private sector growth and stability: PPPs provide the private sector with access to reduced risk, secure, long term investment opportunities .Such agreements ensure private capital flows, provide investment opportunities, and stimulate local industry and job markets (IISD report, 2012)
- Generation of additional revenues: The private sector may be able to generate additional revenues from third parties, thereby reducing the cost of any public sector subvention required (European Commission, 2003).
- Increased budget/financing certainty: The transfer of responsibility (and risk) to the private sector shields governments from unforeseen financial liabilities following cost overruns, delays, or /operational difficulties and the secured financing for the length of the contract **(IISD report, 2012).**

2.5.2 Potential disadvantages of Public-Private Cooperation

PPPs, like conventional service delivery mechanisms, also have disadvantages and drawbacks as found and summarized in mainstream discussion and literature, **IISD report (2012) ; Chan et all (2008)** list the main disadvantages of public private partnership as follows:

- More complex contract : Long-term nature projects and the complexity associated, difficult to identify all possible contingencies during project development and events and issues may arise that were not anticipated in the documents or by the parties at the time of the contract.
- Reduced competitiveness: High tender and transaction costs with complicated and long term contracts reduce the pool of private sector companies with the capacity to apply for certain projects, reducing the government's choice and competitive tender processes**.**
- higher cost: Financing arrangements and risk pricing can result in potentially higher cost difficulties in specifying, pricing, and the ownership of risk, higher contract transaction costs paid in addition to the price of transferring risk from one party to another and higher capital cost because of private cost borrowing.
- Complicated and lengthy tender process and time consuming: preparation of a detailed, clearly structured project appraisal and specification of desired outputs before bidding process, PPP contract and negotiation periods are often more complex and protracted due to the nature of the multi-party, financially intricate, and long agreement terms inherent in the relationship.

- Less flexibility: through a long-term contract to manage the overall business in response to agreed or changing needs and policies future users could be disadvantaged if the level of service quality changes over time.
- Lack of capacity: PPP specific capacity for an agreement is absent and it takes both time and experience to establish it. An over-reliance on external consultants also leads to an expertise flight making it difficult to build knowledge and lessons for the future.
- Higher consumer prices: Driven by a need private sector to cover high levels of cost plus make a return on investment, market-driven pricing can see services cost the consumer more than if delivered by the public sector
- Less accountability/transparency: Project transparency is weakened under the PPP model because of the difficulty in accessing private sector information, there may be a need for greater government involvement in the relationship, to ensure compliance and responsiveness to public concerns.
- Delays and holdups: The complicated nature of the agreements between PPP partners can increase delays, as disputes take longer to be settled and any unforeseen eventualities that takes place in future years, the start of projects is also delayed by complex partner negotiations, political debate and public opposition that can surround PPP projects.

2.6 Critical Success Factors

Critical Success Factors (CSFs) are defined as "the limited number of areas, the result of which, if they are satisfactory, will ensure successful competitive performance for the organization.

They are the few key areas where 'things must go right' for the business to flourish."**(Rockart, 1982).**

The identification of such factors has been viewed as the first important step toward the development ofa workable and efficient PPP procurement protocol **(Zhang, 2005).**

Pongsirie (2002) emphasizes the establishment of a transparent and sound regulatory framework as a necessary precursor to private sector participation in a PPP. Regulation provides assurance to the private partner that the regulatory systems includes protection from expropriation, arbitration of commercial disputes, respect for contract agreements, and legitimate recovery of costs and profit proportional to the risks undertaken. A sound regulatory framework can also increase benefits to the government by ensuring that essential partnerships operate efficiently and optimizing the resources available to them in line with broader policy objectives **(Di Lodovico, 1998, Zouggari, 2003)**.

Qiao et al (2001) lists eight independent CSFs include: appropriate project identification, table political and economic situation, attractive financial package, acceptable toll/tariff levels, and reasonable risk allocation, selection of suitable subcontractors, management control, and technology transfer.

Partnerships appear to be most justified where: traditional ways of working independently have a limited impact on a problems; the specific desired goals can be greed on by potential collaborators; there is relevant complementary expertise in both sectors; the long-term interests of each sector are fulfilled; and the contributions of expertise of the different sectors are reasonably balanced **(Linder, 1999)**.

Generally, the public sector's concerns for transparency and accountability need to be accommodated, and the private sector needs reassurance about safety and return on investment.

The challenge therefore is to ensure that the multiple interests of key participants are skilled fully negotiated and package.

2.7 Constraints Implementing PPP

Based on a study by **Sader (2000) and Camdessus report**, which focused on the experience with partnerships in the water sector the main obstacles within developing countries would seem to include:

- ☒ Political Commitment: In countries where the rule of law is not firmly entrenched governments have reneged on contracts signed by previous administration. There also have been several cases of governments reneging on contractually agreed terms (e.g. the right of levy cost recovering tariffs) in the fact of public dissatisfaction.
- ☒ Public governance: Many private investors have had to contend with conflicting public authorities, for instance central versus sub-national governments, or regulatory bodies versus ministries. In addition, non-existent or inexperienced regulators created avoidable uncertainty about price and tariff setting.
- ☒ Regulatory framework: A weak legal environment necessarily leads to concerns for non-state underwriters of long-term contracts. Existing legislation in many countries was designed to define public sector responsibility in infrastructure and is inadequate in a situation of private participation. In addition, human capital such as relevant regulatory expertise is in short supply in many countries without much experience in privately operated utilities.
- ☒ Award procedures: The award procedures often lack of transparency and are not based on Objective evaluation criteria. Corruption has been a problem- in general, and in the specific context of awards. Also, some projects have been compromised by official preference for local participation, preferred sub-contractors or suppliers and the employment of weakly qualified local staff.
- ☒ Conflicting aims: Often one objective (that is, one PPP project) has been expected to serve several policy objectives, from financial, to macroeconomic, to social, to environmental. Protests by local communities and non-governmental organizations against individual projects have rebounded on investors rather than the initiating authorities.

Zhang (2005) identified six categories of constraints for PPP projects, including: social, political, and legal risks; unfavorable economic and commercial conditions; inefficient public procurement frameworks; lack of mature financing engineering techniques; public sector related problems (e.g., inexperienced government and lack of understanding of PPPs); and private sector related problems (e.g., most people, including investment banks still prefer traditional procurement routs).Similar constraints are also identified **Klijn and Teisman (2003)** found that the inability to develop good partnerships lies in a combination of three factors: complexity of actor composition, institutional factors, and the strategic choices of public and private actors.

2.8 Enabling Environment for a successful Partnership in Water and wastewater Sector

PPP as a tool available to decision makers in reforming infrastructure or service delivery, is most effective when it is accompanied by other reform activities to underpin and reinforce the PPP and to support sustainable improvement. A successful PPP is designed with careful attention to the context or the enabling environment within which the partnership will be implemented **(ADB, 2008)**.

The Government should ensure that a PPP scheme is feasible at the outset, feasibility studies are effective means to help government officials to determine whether or not a PPP scheme is financially attractive and offers good value-for-money during the early planning stages, specific targets related to public accountability, business achievements, social concerns, etc. can be identified and built into the feasibility study, along with other critical success factors (CSF's) for the project. This would also help satisfy the diverse interests of the government, private investor and community, and result in a genuinely feasible and mutually beneficial PPP scheme **(Ng, Wong & Wong, 2010).**

To be successful, PPPs must be built upon a sector diagnostic that provides a realistic assessment of the current sector constraints and situation to have some assurance that the option a government chooses has a good chance of meeting its objectives and that it will be feasible in local circumstances.

As a result of the sector diagnostic, the government is able to determine to what degree an enabling environment exists for PPP and what activities are required in advance of PPP to create such an environment. The diagnostic is important to identify the strengths and weaknesses of the sector , the most promising areas for efficiency increases, regularly gauge and report on the progress of reform, and tweak the reform program as needed **(ADB, 2008 ; ZOU, 2012).**

Figure (2.4) Describes the components of the sector diagnostic and a sequence of PPP activities.

In designing a PPP process and selecting a form of PPP, it is important to consider the reform objectives; policy environment, legal, regulatory, and institutional frameworks; financing requirements

and resources of the sector; and the political constraints and stakeholder concerns **(ZOU, 2012).**

2.8.1 Technical Issues:

PPP would not be considered as an attractive option if the requirements and technologies continuously change during the expected lifespan of the project, the experience of the public and private partners in a PPP scheme is also critical to success, as it can help to resolve how the scheme should be packaged and delivered, especially when it is complex and sensitive in nature **(Ng et all, 2010).**

Under this stream of analysis at the preparation phase, the government should assess current technical conditions and constraints in the water and wastewater sector to be reformed including system efficiency, utility operations, and responsiveness to customers: **(Ng et all, 2010; ADB, 2008; IPDF, 2007; WEF & Boston Consulting Group, 2013; UNESCO-IHE).**

- Carry out preliminary technical overview of the system.
- Define service area and examine if the project size if it is technically manageable.
- Define the scope and interfaces of the project, after conducting diligent base lining. Identify and understand problems by analyzing current performance and capacity.
- Examine if the service quality and the desired technical outcomes of the partnerships approach can be objectively defined and measured before considering the use of the PPP approach.
- Ensure that output/outcome specifications are contractible innovation and the flexibility to change. All specifications should be measurable, clear and achievable.

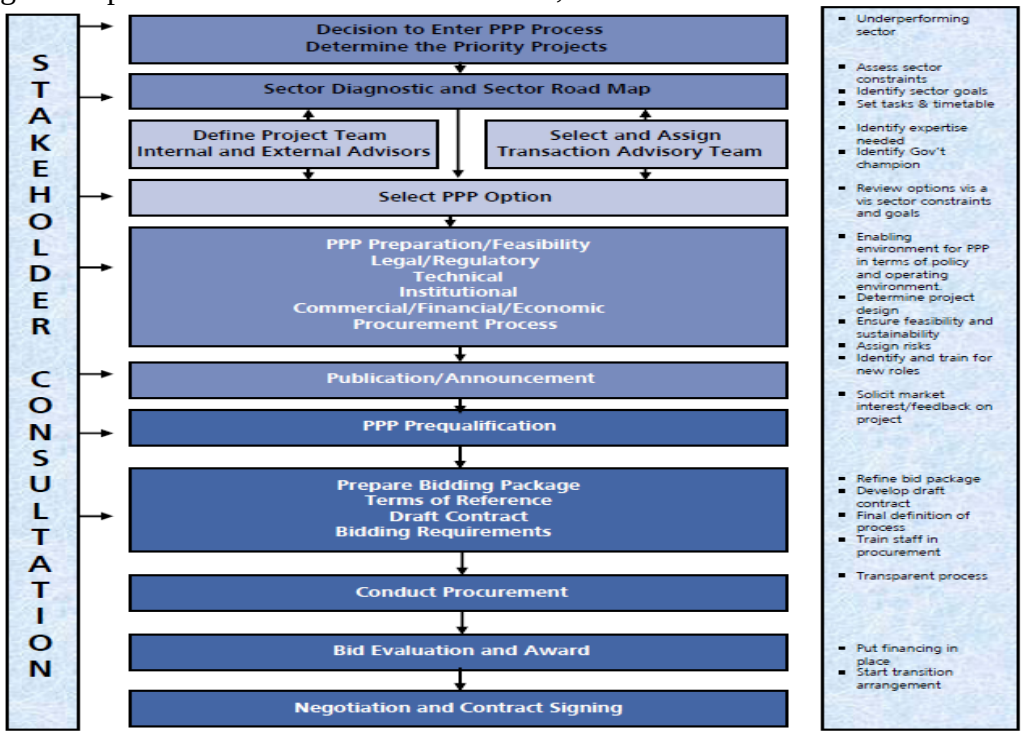

Figure (2.4): Generic PPP project sequence. (Heather Skilling, 2007)

- Define technical performance standards construction, operation and maintenance stages And the performance indicators.
- Examine the possibility of innovative solutions (e.g. Leading to time, cost saving).
- Examine if the government have the experience and capacity in managing similar PPP projects.
- defining the necessary investments for achieving improvement, developing the procurement plan and process for achieving the investments.
- Estimating the cost of the desired services (factoring in presumed efficiency gains) and cost recovery tariffs is possible or estimating of replacement cost and capital expenditure requirements.
- Estimation to the human resources requirements for managing the PPP project.
- Preliminary analysis of all possible technical and operational risks.
- preliminary analysis of manageability of the operational aspects of the project.

According to **UNESCO-IHE** These inputs will be the keys in developing reasonable performance targets and methods for measuring Performance, will aid in valuing the assets at the end of the contract. the assessment results of the assets' physical condition, judgment on the assets remaining useful life, and estimate of the capital expenditure and human resources required to meet the performance criteria and provide safe and efficient service.

2.8.2 Legal, Regulatory and Policy Framework

The effectiveness and impact of a PPP depends on the regulatory mechanisms used to influence and guide the parties and in particular the private sector decision making process, because of these critical interactions, it is preferable to ensure the development of effective legislative and regulatory provisions before developing PPP relationships **(European Commission, 2003).**

A well- structured legal and regulation framework can not only increase the willingness of the private sector to participate in infrastructure development, but also increase benefits to the government by ensuring that the projects operate efficiently **(Zuggari, 2002).** Such a framework is also needed to secure proper risk allocation and avoid potential corruption in the PPP implementation process **(Kumaraswamy & Zhang).**

According to **EIB (2011)** enabling legal, regulatory, and policy environments are critical to a sustainable PPP. At a baseline level, clarity and certainty of a country's legal and regulatory framework are necessary conditions for the success of a PPP programs . The existence of a PPP law or bylaws can help to attract investors to a country by enhancing or clarifying the legal framework applicable to PPPs.

This will also prevent reliance on general laws that are not specific and therefore not suited to PPPs. Investors and lenders will seek comfort that the governing law of their contracts affords them adequate protection and that disputes can be resolved impartially and efficiently.

Through PPPs a high-level action plan for legal, regulatory, and policy frameworks should be developed and includes the following **(ADB, 2008):**

- Creating a policy framework for PPP activity and regulation.
- Establishing a process to make the legal reforms needed to reduce impediments to improved/expanded service such as assignment of responsibility for development, control, financing, regulating, and managing infrastructure assets.
- Establishing a process to make any realistic legal reforms needed to overcome potential constraints to PPP including limits on assets ownership or management, repatriation of resources, and barriers to cost recovery.
- Establishing a process to enact the regulatory requirements of the PPP including monitoring of service obligations, compliance with service conditions, consumer protection, tariff regulation, and asset management.
- Developing a PPP process that is consistent with the legal and regulatory regime.
- Developing PPP legislation that seeks to address perceived gaps in the legal and regulatory frameworks.

Regulation is a critical part of any private sector arrangement. Basic decisions about the regulatory framework need to be made early. Regulatory capacity can determine which private sector option is most appropriate in a country. And the regulatory system chosen can affect the willingness of the private sector to participate and the cost of its participation **(UNESCO- IHE).**

Regulatory tasks will vary depending on the private sector option (see table 2.6).

2.8.3 Institutional Framework

PPP development requires major institutional changes not least because the role and responsibilities of the public sector change from direct service provision to management and monitoring. **(European Commission, 2003).**

Mahalingam and Kapur (2009) examine the characteristics of an enabling institutional environment that could support long-term PPP and they consider that a framework that allows for successful identification of PPP projects and provides capacity support for the public sector to develop PPP projects, the ability.

Table (2.6): Regulatory tasks required under different options for private sector participation

Regulatory task	Management contract	Lease	Concession	BOT	Divestiture
Regulate prices	-	✓	✓	✓	✓
Promote operating efficiency	-	✓	✓	✓	✓
Specify and monitor service standards	✓	✓	✓	✓	✓
Control externalities	✓	✓	✓	✓	✓
Maintain public good functions	✓	✓	✓	✓	✓
Ensure asset serviceability	-	✓	✓	✓	✓
Ensure development of essential infrastructure	-	-	✓		✓
Controls over powers to manipulate land values/land speculation	-	-	✓		✓
Controls over unfair trading practices	✓	✓	✓	✓	✓
Safety net regulations	✓	✓	✓	✓	✓
Promote efficient water use	✓	✓	✓	Possibly	✓
Ensure responsiveness to final customer needs	✓	✓	✓	-	✓

Source: (REES), Regulation and Private Participation in the Water and Sanitation Sector

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To structure projects to mitigate risks and gain stakeholder acceptability, and the ability to monitor the project and steer it through turbulences that it might encounter over its life cycle are three key elements of a successful PPP program.

The European Investment Bank (2011) in their study list the features of institutional framework which contribute to the successful development of PPP programs: explicit PPP policies, adequate institutional capacity, clear processes for project identification and budget allocation and sound feasibility studies of potential projects verified by unbiased and rigorous approval processes.

The government should clearly define institutional arrangements and responsibilities, and arrange coordination of agencies involved with projects to ensure effective communications and regulation over the life of the contract. The relationship among these entities should therefore be made clear and non-conflicting. A PPP Centre with strong leadership and sufficient authority can be a key factor in successful PPP implementation **(ASEAN Public – Private Partnership Guidelines).**

Some key institutional arrangements used to support PPP as PPP units, project implementation office/project implementation unit, and technical assistance by hiring transaction advisors and/or specialist advisors **(ADB, 2008).**

2.8.3.1 PPP Unit

The creation of dedicated PPP units has been seen as one such mechanism by which governments can define, regulate and build public sector capacity in regards to PPPs, and has been attributed by the UN as an indicator by which a nation's PPP maturity is assessed **(United Nations, 2008)**.

The scope of the PPP unit's mandate will be determined by the government from time to time, and may include some or all of the following responsibilities **(IISD, 2012; ASEAN Public – Private Partnership Guidelines):**

- Management of the government's PPP policy and strategy.
- Assistance with project identification, selection, coordination and analysis for, or in conjunction with, government departments.
- Capacity-building and learning-by-doing training for government employees concerned with implementing PPP projects.
- Provision of advisory, coordination and transaction management services to departments and agencies to assist them to develop and implement PPP projects.
- Project oversight, contract management services.
- Coordinate departments and agencies for projects that also require the participation or approval of subnational government agencies.
- An approval and governance role.
- ensuring awareness and understanding of PPP within the private/public sectors and the wider community at large.

Such units and the public sector in general, have a key role to play in creating trust, which in turn allows a reduction in risk and therefore cost, trust must include the open exchange of information, the possibility to have non-conflictual dispute resolution and respect for the objectives of all parties**.**

The PPP unit should also play an important communications role with stakeholders and the wider civil society to provide and demonstrate quality service provision and there must be a consideration of the links between the PPP unit and the line ministries and, possibly, other levels of government.

An important element of the success of a PPP program is political and community support **(ASEAN Public Private Partnership Guidelines; ADB, 2008).**

2.8.4 Investment framework.

The success of a country's Public Private Partnership (PPP) program depends on the quality of investors it is able to attract and the availability of finance. Development of a transparent investment regime coupled with the removal of barriers to investment (such as currency exchange controls or restrictions on repatriation of dividends) will assist in attracting potential foreign investors, which will in turn have the effect of increasing competition **(European Investment Bank, 2011).**

Farquharson et all (2011) demonstrates that "wherever possible a government should present its investment plans and strategy to the private sector and to demonstrate top-level political commitment, high-quality plans set out the level of investment required, the links between private and public investment, and the areas within the plan where government expects PPPs to play a role.

A successful investment strategy will take account of all the trends shaping the water and wastewater sector, take in account of sustainability, consider the entire value chain, and adhere to a set of general investment principles. The investors' primary interest is to maximize shareholders' returns, so they will seek to minimize risks. The requirement of low risk and profitability limits investments. Clearly, the private sector will only operate where certain profitability requirements can be met, which considerably limits the scope for Public-Private Partnerships." **(OECD, 2003).**

According to **World Bank (2001)** Because assets are long-lived and capital intensive in the water sector, firms need assurances of adequate returns. "The long pay-back periods for most water infrastructure do not 'fit well' with capital markets in which maturities are typically short. There is, accordingly, a need for the use of guarantee mechanisms so that long-term money is available".

As for investments in water supply and wastewater , the private investment flows have been very erratic, reaching its peak in 1997 and falling to under one billion US$ in 2003 (Figure 2.5). During the 1984- 2003 period, there were 140 developing countries which had introduced some form or another of private sector participation in infrastructure services **(Prasad, 2006)** (Figure 2.6).

According to the World Bank's private project investment database, there were only 2 private investment projects in water and wastewater in 1987, increasing its peak in 1999 with 38 projects and then decreasing to 11 projects in 2003. There are currently 266 projects in developing countries, of which 42% (111) are of the concession type and less than 1% (20) only with full privatization (divestiture). At least 55 countries had some sort of PSP in water and sewerage by the end of 2003**(Prasad, 2006).**

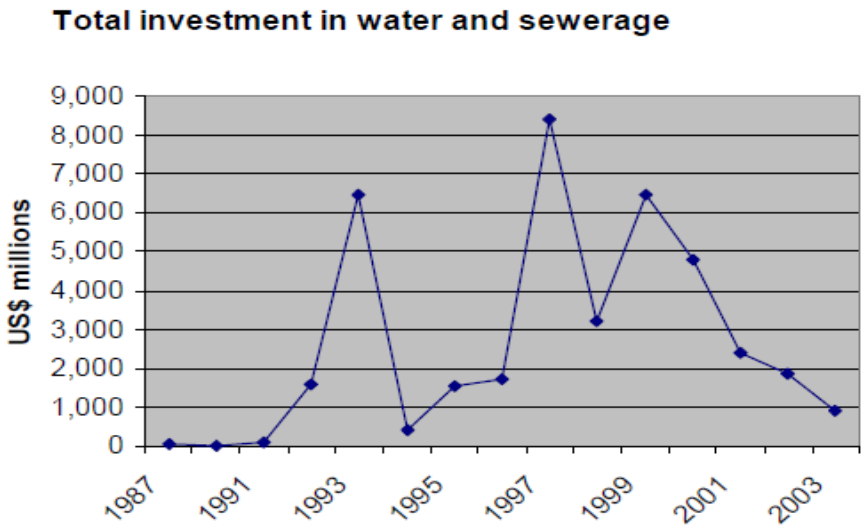

Fig (2.5): Total investment in water and wastewater sector

Source: World Bank PPI

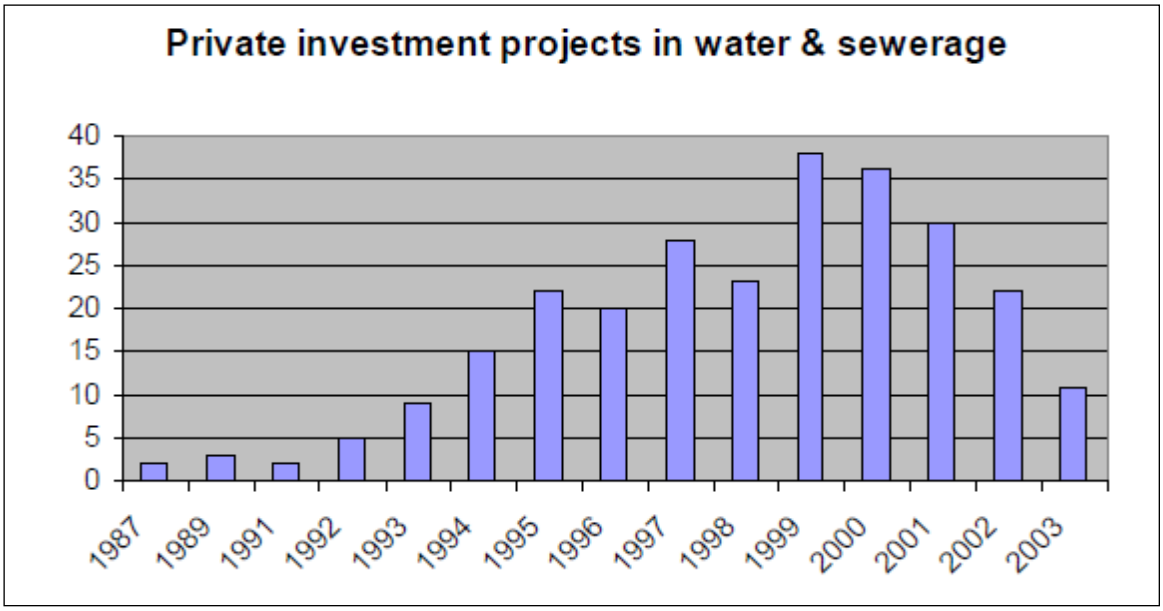

Figure (2.6): Private Investment Projects in Water & Wastewater

Source: World Bank PPI

2.8.5 Socio-Economic Framework

Essential step of the project appraisal aims to understand the social, economic and institutional context n which the project will be implemented. Actually, the possibility of achieving credible forecasts of Benefits and costs often relies on the accuracy in the assessment of the macro-economic and social conditions of the region **(European Commission, 2008).**

As social acceptance is indispensable in today's society, the government should never commission a PPP scheme for the sake of expediting the facilities or services provision

without satisfying the requirements and expectations of the community **(Heinke & Wei, 2000)** . Citizens are more cautious about the service quality, charges, environmental impact, job opportunities, etc. when the facilities or services are delivered through the PPP mode **(FIDIC, 2001)**. As a result, engaging the public to make them realize the potential impacts and benefits of the scheme, and hopefully gaining their trust and support at the end would be of significant importance **(H. M. Treasury, 1998).**

An in-depth analysis of the socio-economic context is also instrumental for carrying out the demand analysis, which consists of the demand forecast for the goods/services the project will generate.

The forecast for demand is a key indicator for the estimation of the future revenues of the project and its financial performance The forecast demand is crucial for non-revenue generating projects as well **(European Commission, 2003).**

The main social responsibilities and obligations through PPP in water and waste water sector are the responsibility of provision of public services since PPPs are attractive to the private sector because such projects provide private players with a steady stream of guaranteed revenues and profits for longer periods and the responsibility of Community Welfare and Equity that from the perspective of the social obligations of a welfare state, it is required that public services like water supply and wastewater should be developed towards the larger goal of equitable, just and dignified lives of its citizens **(Dwivedi, 2010).**

2.8.6 Stakeholders Consultation

Improvements with regard to more participation of stakeholders are important not only to take into account the needs, values, and opinions of those who are affected by the reforms, but also to ensure that the implications of a new development model are acceptable to communities, stakeholder participation involves taking part in planning, design, implementation, operation, and maintenance of water works, in setting and administering tariffs, and in supervision and quality control **(Dayem & Odeh).**

Governments need to identify the key groups of stakeholders and assess their potential support for or opposition to private sector participation, because in some cases opposition will limit the range of feasible options for private participation **(UNESCO-IHE).** In the definition of **El-Gohary et al (2006)**

PPP stakeholders are “individuals or organizations that are either affected by or affect the development of the project.”

The early involvement of all stakeholders in the PPP process helps develop an enabling environment.

The stakeholders provide valuable information on the points of concern, the performance expectations, potential risks, and more transparent information on service levels and tariff increases.

This input is also critical to assess whether key business assumptions of the proposed PPP (in particular tariffs/fees) are realistic and enforceable **(ADB, 2008; Anderson & Janssens, 2011).** Figure (2.7) illustrates the stakeholders interests.

The Consultation with stakeholders is very important for several reasons: **(ADB,2008)**

- Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation.
- The stakeholders are critical to the sustainability of a PPP. Even if the contract is awarded despite opposition.
- Stakeholders provide valuable input to the design and practicality of an approach.
- Allowing stakeholders to comment on PPP strategies allows for a sense of buy-in and can lead to innovative approaches.
- Broad public support and understanding of the reform agenda encourage politicians to stay committed.
- Dissemination of information leads to increased credibility of project partners.

There are many ways to involve stakeholders, each suitable for a different purpose the appropriate approach depends on the objectives. Higher-intensity engagements can lead to better decisions and increase their legitimacy by harnessing the creative powers of the stakeholders most directly involved. **(World Bank, 2006)**

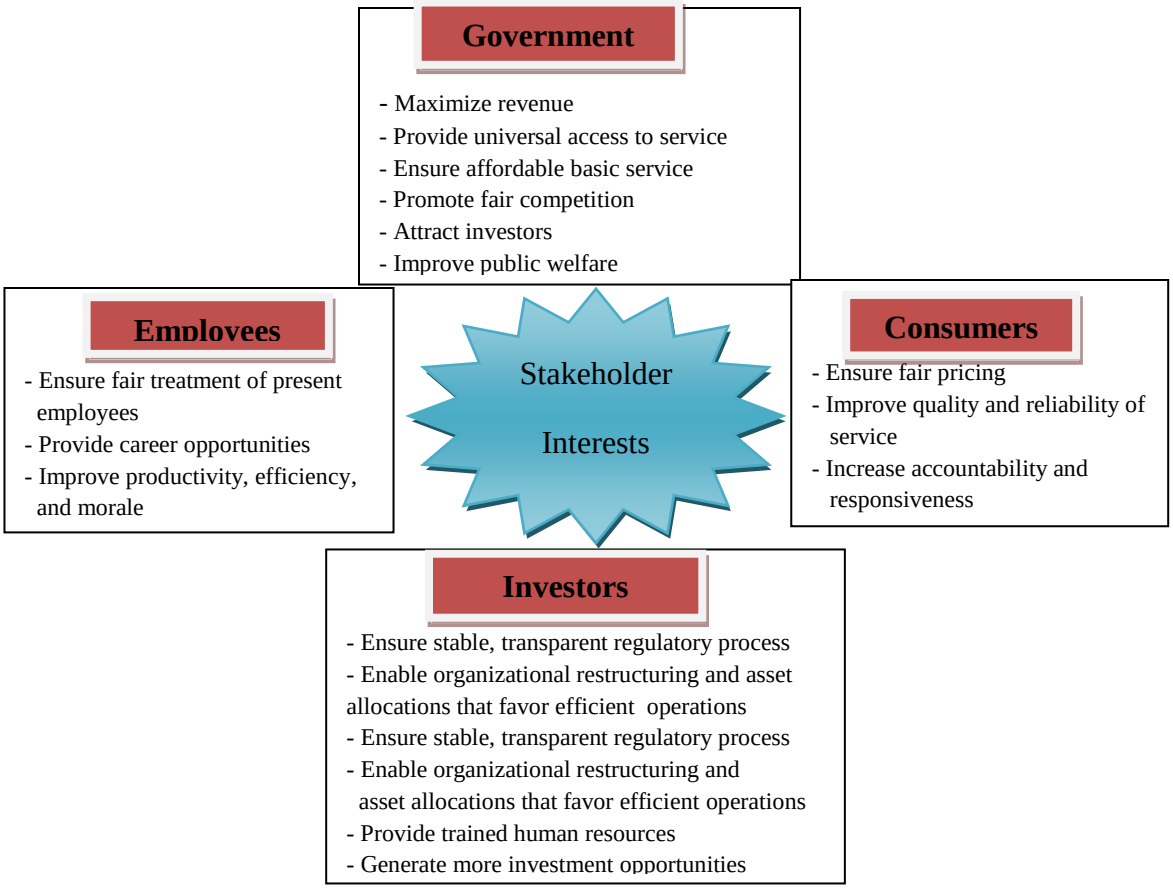

Figure (2.7): The Range of Stakeholders Interests in PPP. Heather Skilling and Kathleen Booth.2007

2.8.7 Financing Requirements

Well-structured and important projects should not be delayed due to the lack of availability of adequate Finance, The support of the government can make a large number of commercially unviable projects feasible. The government should be capable of generating adequate resources for meeting the requirements of the infrastructure sector **(World Bank, 2006)**.

PPPs are normally financed on project basis. This refers to financing in which lenders look to the cash flows of an investment for repayment, without recourse to either equity sponsors or the public sector to make up any shortfall. **(UNESCAP, 2011).**

The following will briefly describe the typical funding agencies, kinds of financial instruments used for funding PPP projects and funding sources of PPP project.

2.8.7.1 Source of funding

PPP projects are characterized with high debt component in their capital structure. The equity component of the capital structure is normally provided by the project promoter, government promoting the project through PPP route, or infrastructure investment fund, third party private investors, and internally generated cash. The debt financings are normally provided by the commercial banks, capital markets, and national and regional development banks. In addition to these, the other agencies providing funding to PPP projects are: Contractors, Equipment suppliers, Entrepreneurs, Export Credit Agencies, Bilateral and Multilaterals organizations, Institutional Investors and National and Development Banks**. (EAP^{3}N Project; UNESCAP, 2011; World Bank, 2006)**

The other sources of project finance include grants from various sources, supplier's credit, etc.

Government grants can be made available to make PPP projects commercially viable, reduce the financial risks of private investors, and achieve some socially desirable objectives. **.(UNESCAP, 2011)**

Financing from these alternative sources have important implications for the project's overall cost, cash flow, ultimate liability on concerned parties, and claims to project incomes and assets**.(EAP^{3}N Project)**

Project finance is often a more efficient way for lenders and investors to finance major infrastructure investments by the private sector as well as increase the availability of financing. It is important for the public authority to understand clearly the overall capacity and capability of the lending markets when implementing a PPP program, and there may be steps it can take to encourage the development of such markets. **(Farquharson et all, 2011)**

2.8.7.2 Diagnostic assessment for current financial arraignments

As part of the diagnostic assessment, the current financial arrangements and outcomes of the sector should be understood and assessed to make a preliminary decision about what kinds of private sector participation are likely to be feasible before beginning detailed project development. The objective is to provide affordable services, encouraging

use, while providing the private partner with revenue sufficient for commercially viable operations **(ADB, 2008; UNESCO-IHE)**

While this analysis begins in the diagnostic stage, it continues throughout the PPP process as an iterative analysis of the PPP structure as it evolves. There should be analysis of the financial flows within the sector, the financing gaps, and the commercial results. The government using the result of the analysis and develop an action plan regarding the commercial, financial, and economic issues for agreeing with stakeholders on the economic balance of costs and benefits to be achieved in sector reform, designing a PPP plan to achieve these sector results, and developing a financing plan for PPP that is realistic for the market and is commercially viable and sustainable. **(ADB, 2008)**

2.8.8 Risk Management

As PPP, promoters strive to balance the interests of the private sector with those of the public sector, they face a complex challenge: to maintain sufficient incentives for the private sector, while minimizing unmanageable risks and allowing for public safeguards. Risk in a PPP relates to uncertain outcomes, which have a direct effect either on the provision of the services or the financial viability of the project. **(Yescombe, 2007)**

Critical to the success of a project is appropriate allocation and mitigation of risk. The assessment of risk for a project and the allocation of that risk will depend on the project conditions including the type and location of the project, whether bulk water supply and off-take agreements are used, the negotiating position of the parties, and the proposed technology**.(UNESCO-IHE)**, Risk can only be allocated once it has been identified and quantified in terms of a good and detailed risk management plan. Risk must be considered over the whole of the project life cycle**.(Akerele & Gidado, 2003)**

To achieve well-balanced and customized risk allocation, the project's promoters can divide their work into three broad sections: identifying and assessing the risks; determining the party best able to manage the risk; and reassuring investors by taking measures to mitigate and share risks.

2.8.8.1 Risk Identification and assessment.

It is difficult to generalize the risks inherent in PPP projects as the risk profile of a PPP project varies with a number of factors, including the country in which the project is situated, the type of infrastructure sector, and the unique socioeconomic environment surrounding the project.

The uniqueness in the risk profile of PPP projects has led to use of risk identification techniques that are based on the knowledge of the experts in the related fields and experience with similar projects. Some of the other risk identification techniques in addition to experience and experts are intuition, checklists, site visits, case studies, brainstorming sessions, allied organizations, databases, and workshops **(Akintoye).**

The figure (2.8) shows All potential risks along the PPP project cycle .

2.8.8.2 Risk Allocation

The allocation of risk occurs during the analysis and risk response development stage. In a PPP risks are supposed to be allocated to the sector best able to cost-effectively manage them. **(Fussell et all, 2009).**

Interestingly, the risks that are allocated to the private partner rarely stay with that partner, what usually happens is that the private partner transfers all the risk to the subcontractors.**(Edwards, Shaoul, Stafford & Arblaster, 2004)**

The final risk allocation appropriate for any project will depend on the nature of the assets, the industry sector and the actual financial structure adopted for PPP. Each industry sector has unique characteristics. **(DOFSA, 2000)**

PPP projects target at an optimal risk allocation strategy that enables the project to achieve value for money by minimizing the project costs. Allocation of risks to party not in the best position to manage the risks will charge premium for assuming the risks and this will increase the project costs**.(EAP^{3}N Project)**

2.8.8.3 Risk Mitigation

Attract investors by pre-emptively sharing and mitigating risks that are difficult to manage. If the perception is that the project's risks outweigh the opportunities, potential investors will stay away.

For the more formidable risks, The project's promoters need to understand that assigning such risks to the private sector will increase the price they are paying. Consequently, they may apply various techniques to reduce these risks for the private sector. Besides direct government support (such as co-financing, subsidies or administrative support), these techniques involve various risk-sharing and mitigation mechanisms. **(WEF & Boston Consulting Group, 2013)**

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Design & construction		Site risk	— Availability of site (land acquisition/rights-of-way), quality of site (geological conditions, existing asset condition), zoning permits
		Design risk	— Inadequate planning, substandard design vs user requirements, lack of system integration, delayed construction permits, delay in PPP approval
		Construction risk	— Time delays, completion risk, cost overruns, quality issues, sub-contractor underperformance, untried and complex technologies, design change requests
		Environmental and social risk	— Delayed environmental permits, environmental constraints for construction and operation, stakeholder opposition, costs of social and environmental mitigation
Operations		Commercial risk	— Lower demand than forecast, higher price elasticity, network interface risk, revenue collection risk
		Operating cost risk	— Higher operating costs, maintenance costs, labour costs and commodity prices
		Performance risk	— Operational inefficiency, system underperformance, reduced asset availability and capacity, service interruptions, innovation risk
		Financing risk	— Refinancing availability, borrowing rate risk, counter-party and government sponsor risk
Political & macro		Macroeconomic risk	— Changes to economic growth, population, demographics, industrial development, interest rates, exchange rates, inflation
		Regulatory risk	— Changes in regulated prices, competition, sector framework, taxation
		Political risk	— Breach of contract, expropriation, currency inconvertibility, no profit repatriation
		Force majeure	— Natural or man-made events, e.g. earthquake, flood, hurricane, civil war, riot, crime, strike

2.8.9 Managing the interface between Public and Private in PPP projects

Previous researches mainly focus on the planning, success measurement, and risk management, which ignore the process variables that can strongly influence the performance of PPPs. As a collaborative venture between public and private sectors, the quality of the relationship between them has been shown to be a key contributor to the success of a PPP project**.(ZOU, 2012)**

Fox and Butler (2004) suggested that a partnership should be established based on: a local needs analysis; involving service users and communities the partnership process; having a well-established governance framework that clarifies partners' responsibilities and accountabilities, and; having performance measures ensuring the partnership makes a difference. **Abdel Aziz (2007)** identified a number of principles as important characteristics for PPP implementation at the program level with the availability of PPP institutional /legal framework and policy and implementation units, and perception of PPP objectives and performance and method specifications being among these factors.

Julian et al. (2006**)** have researched into how to manage trust and relationships in PPPs, and pointed out that PPPs can increase efficiencies at some micromanagement levels, but may not be able to establish trust.

Crimsey and Lewis (2004) developed a framework, which can assess ongoing business viability and capacities of the contractor to meet requirements for the term of contract. Some research has also been done on how relationships are managed between private sector organizations within the concession, and between the private organizations and public sector clients . **Smyth and Edkins (2006)** researched relationship management in PPP projects, examined management of these projects.

Due to the long life cycle of PPP projects, from at least 5 to 30 years to even longer, public and private parties have to cooperate and work together to solve problems in the longer term. This implies contractual governance and relational governance must be positioned as substitute arrangements **(Zheng et al, 2008)**.

The need for understanding both short-term and long-term relationships between public and private sectors is a thus clear imperative in structuring and implementing a successful PPP.

The European Commission (2003) and with the context of a PPP project suggested two separated management processes must be considered:

- Project management - dealing with the development of a project up to and including award of contract, Generally along the lines of conventional project management, but with additional expertise reflecting the changed nature of the process.
- Contract management - describing the procedures and organization required to ensure that the appropriate service is provided from the date of contract award to the end of the operating period.

Managing contracts is a process that takes place throughout the life of the PPP. Furthermore, contract management seeks to ensure the proper delivery of public services .In order to facilitate success, human and financial resources and the necessary regulatory or contract management arrangements need to be established for the construction phase, the commissioning stage, and the operational stage. **(Farquharson et all, 2011; European Commission, 2003)**

The aspects of Contract management are:

2.8.9.1 Monitor and manage project delivery and service outputs

Service delivery management has two major elements: risk management and performance management.

The Performance Management relates to the monitoring of service delivery and the assessment of performance relative to the standards defined in the output specification.**(European Commission, 2003),** and is concerned mainly with ensuring the quantity and quality of service delivery as per the contract, resource utilization, and performance improvement in the future to reflect technological and other new developments as appropriate.**(UNESCAP, 2011).**

In order to effectively monitor the implementation of the project, the PPP Company will need to provide the contract management team with operational and financial data on an ongoing basis.

The PPP contract should have set out the basic information requirements and frequency. **EPEC (2011)** lists all needs of the contract

management team to do:

- monitor the attainment of key performance indicators;
- review quality control and quality assurance procedures to ensure that these systems are in place and effective;
- establish and manage the day-to-day relationship with the PPP Company
- report regularly to the stakeholders.

The transfer of risk in the Project Agreement must be confirmed on an ongoing basis by the performance monitoring carried out. This will ensure that the level of service required by the output specification is delivered and if a compliance failure is identified.**(European Commission, 2003)**

It is essential for the contract management team to have a clear understanding of the requirements of the PPP contract and the rationale for those requirements. The role of the team will vary according to whether or not these risks have been identified in the contract and contingency plans have been established. **(EPEC, 2011)**

2.8.9.2 Relationship Management

Relationship management between the private party and the government over the long contract tenure of a PPP project is vital for its success. Building an effective relationship that is mutually beneficial does not imply that either party has to compromise its contractual rights and obligations**.(UNESCAP, 2011).**

It will be important to ensure that such arrangements are properly managed so as not to confuse the respective contractual responsibilities of each party. Underlying these arrangements will be specific provisions in the Project Agreement to be administered by the contract management team, covering all aspects of service delivery and payment.

These will include output specifications**,** payment arrangements**,** financial performance, monitoring arrangements**,** security and insurance**,** management of interactions**,** dispute resolution, compliance**,** contingency for default**,** change management and end of contract conditions. **(European Commission, 2003)**

The key factors to a successful relationship are mutual understanding, open communication and information sharing, and recognition of mutual objectives. Appropriate lines of communication at strategic, business and operational levels between the implementing agency and the private party are necessary to build a successful relationship. The clear lines of communication at the appropriate levels help to reduce confusions and ensure a prompt resolution of issues that may arise. **(UNESCAP, 2011).**

Usually, a team comprising officials from the implementing agency and other concerned departments of the government (PPP Unit) supported by a range of specialists and technical advisors with varying levels of involvement is required for contract management . The unit responsible for the day-to-day management of the process.

The skills of the people appointed to this unit will be critical. While the unit may consult with interested stakeholders or representative forums, it must be able to view the process from a broader, social perspective, focusing above all on the interests of water and sanitation consumers. **(UNESCO-IHE; EPEC, 2011).**

2.8.9.3 Features of Good Relationships in PPP

Arino (2001) identified several elements which could contribute to the relationship quality in the context of firm alliances. They are the initial conditions surrounding the alliance formation, the cumulative experiences of the parties with each other's behaviors and the impact from environment. These will influence the perceptions and attitudes the parties have about each other and affect their relationship A healthy relationship is built upon an appropriate PPP contractual framework (initial condition), and characterized by trust, respect, openness, co- operation and working together to solve problems and achieve mutual goals (cumulative experiences in dealing with issues). Poor or unsatisfactory communication and cooperation would result in relationship risk, and hence decrease the capability in managing risks.

If relationships and their management are apparently so important in PPPs, then how do we best design for its implementation? Apparently, an effective contractual structure

which could provide a clear chain of reporting, defined areas of responsibility, defined levels of decision-making and authority, is an antecedent for good relationships. Furthermore, incentives for RM uptake and maintenance must be included in the contract

conditions with both pain and gain consequences for all participants **(Jefferies et al., 2006)**.

According to **UN (2008)** There are seven main areas where good relationship in PPPs must be observe **Governmental level:** executive stewardship of the system as a whole; The PPP process requires coherent policies that lay down clear objectives and principles, identifies projects, and sets realistic target and the means of achieving them, with the overall aim of fining the support of the population for the PPP approach.

Public administration: where policies are implemented; Governments can build their capacities in a combined approach that includes building skills, establishing new institutions and training public officials and using external expertise.

Judiciary: where disputes are settled; legal processes in many jurisdictions are either insufficient or too complex and therefore fail to provide sufficient security and incentives to investors in PPP arrangements. As a result, lawmakers should aim to create PPP rules that are „fewer, better, and simpler.

Economic society: refers to state-market, public and private sectors; PPPs allow risk to be transferred to the private sector, which are most able to manage them. However Governments also need to accept their share and help to mitigate those risks allocated to the private sector.

Political society: Where societal interests are aggregated; the selection of the bidder should be undertaken following a transparent, neutral, and non-discriminatory selection process that promotes competition and strikes a balance between the need to reduce the length of time and cost of the bid process while selecting the best proposal. There should also be zero tolerance of corruption.

Civil society: where citizens become aware of and address political issues; and the PPP process should put people first by increasing accountability and transparency in projects and improving the quality of life, especially of the socially and economically disadvantaged.

Sustainable development: where environmental concerns are included. the PPP process should integrate the principles of sustainable development into PPP projects by reflecting environmental considerations in the objectives of the project, setting specifications and awarding projects to those bidders who fully match the green criteria.

CHAPTER 3

PREVIOUS STUDIES AND PPP EXPERIENCES

3.1 Introduction

In this chapter, the researcher aimed to provide an overview of the literature that studied the PPP arrangement in water and wastewater sector by presenting 23 studies in order to understand how the PPP successfully implemented worldwide, study the impact of applying PPP and how far its contributed in improving the water and wastewater services. In terms of Arabic studies which are related to this subject, researcher found a rare number. And also in order to study the efficiency and effectiveness of applying PPP for water and wastewater management in Palestine and surrounding area, a 3 examples of public private partnership projects that havealready been implemented will also be presented in this chapter.

3.2 Previous Studies:

3.2.1 Local Studies

1. Saghir, Sherwood & Macoun (1999): "**Management Contracts in Water and Sanitation-Gaza's Experience"**

This article presents The Gaza Management first private Contract, one of the sector initiatives in the Middle East water sector, used an innovative contracting out strategy to overcome the limitations posed by weak local regulatory capacity. Experience with the management contract in Gaza suggests that conferring higher degrees of management responsibility to an operator could expedite improvements. As successful as the operator has been in meeting the requirements under its direct authority, local authorities have not been consistent in supporting those improvements.

2. Mimia & Mareib (2002): "**Privatization of Sanitation and Desalination Projects in Palestine"**

This study is about understand incentives for privatization of water supply and sanitation services in Palestine, with more emphasis on the households' Affordability and willingness-to-Pay for improved water and sanitation services. The results show that people in Palestine bear the burden of high water supply and sanitation costs.

Privatization of the water and sanitation sector will guarantee sustainable development of these sectors under limited financial resources and dependency on external funds.

3. Mohammed (2007): "**Prospects of Private Sector Participation for Sustainable Water and Sanitation Services in the Gaza Strip**"

The aim of this study is to highlights all aspects related to private sector participation in the water sector in the Gaza Strip in the light of the international trends for water sector privatization and the existing water and wastewater service situation. The results is stated that in unstable economic and political situations, the potential successful forms of PSP in the Gaza Strip are short or medium term contracts . Enforcing of water regulations and enhancing the role of the regulating bodies are essential to overcome many constraints

hindering the development of a successful PSP in the water sector. The study recommended to establishing guidelines for Private Participation in water and sanitation services which will assist the public service providers and the local authorities to engage the private sector in water supply and sanitation services

4. Rady (2007):" **Public-Private Partnership for Wastewater Reuse in Irrigated Agriculture: A Vision for the Palestinian Case**"

This paper presents the role that PPP can play in promoting the use of wastewater in irrigated agriculture. It delineates the range of services that PPP can provide, including treatment plants, distribution systems, and billing and collections. Furthermore, the paper exemplifies the benefits of applying the PPP concept in wastewater reuse from both the socio-economic and environmental sides. The paper also elucidates the key points for a successful PPP as well as the appropriate implementation environment, including the required qualifications of the private partner. Finally, the paper concludes with a proposal for the Palestinian case that involves the implementation of a triangular PPP. The proposed PPP consists of a public entity in cooperation with Water Users Associations ; a private partner and a foreigner donor .

5. El Sawalhi & Mansour (2014): **Preparation Critical Success Factors for Public private Partnership (PPP) projects in Palestine.**

This article explore the critical success factor for PPP projects in Palestine. The study identified and ranked the critical success factors which are stability political situation, clear and detailed contract, existence a sound economic policy, reliable delivery of service, analysis and allocation of risks, suitable legal framework, experienced private sector, profitability to the private sector, and accepted level of toll / tariff for a project.

The study recommended that the government have to create a legal PPP framework and should establish PPP standard guidelines and processes to guide the implementation of PPP projects by stakeholders.

3.2.2 Arabic Studies

1. Abu Shams& Awamleh (2004):"**Public Private Partnership though, Build-Operate Transfer in Jordan wastewater sector".**

This paper refers to a Build-Operate-Transfer (BOT) contract includes Funding, Design, Built, Operate a wastewater treatment plant named As-Samra which is the largest wastewater treatment plant in Jordan and transfer back to the Government of Jordan after 25 years .

It was concluded that treated wastewater effluent has to be considered as a water resource and added to the water stock for reuse, Priority shall be given to agricultural reuse of treated effluent for unrestricted irrigation and the role of the private sector participation is expanded to transfer management of infrastructures and services from the public to the private sector, in order to improve performance and upgrade the level of service.

2. Jamali (2004): "**Success and failure mechanisms of public private partnerships (PPPs) in developing countries Insights from the Lebanese context**".

The paper sheds light on the PPP concept and the rationale for invoking private participation in developing countries. It also identifies critical success factors and policy requirements for successful PPP implementation. Finally, the paper presented a case study assessment of a post-war PPP initiative in the Lebanese telecommunications sector and draws out lessons for improving the effectiveness and viability of PPP projects in the context of developing countries.

3. Yamout & Jamali (2006): "**A critical assessment of a proposed public private partnership (PPP) for the management of water services in Lebanon**".

This paper assesses a proposed city of Beirut and its suburbs are considered as the center of social, economic, and political PPP for the management of water services in the Lebanese capital, Beirut.

Although the activities in the country, safe drinking water is not accessible to all the population of the city in view of the current economic crisis and the high level of urbanization. A PPP is viewed as a promising solution to the water supply problem, especially in poor and suburban areas. This paper assesses the potential promise of different forms of PPPs in the context of the economic and institutional framework of water management in the Greater Beirut Area .

4. Odeh (2009):"**Towards improved partnerships in the water sector in the Middle East: A case study of partnerships in Jordan's water sector".**

The goal of this research is to identify the attributes of effective partnerships in the water sector by examining several case studies that have achieved a modicum of success in Jordan. The researcher selected four indicators to assess effectiveness: water quality, sustainability of the water supply, affordability and financial arrangements, and efficiency of the water services. The factors that appear to have the most impact are the form that contracts take, the structure of governance arrangements, and the legal context which only contracts with clearly defined targets can ensure accountability to the customers receiving water services. At the same time, sufficient flexibility must be built into each contract to allow for a review of targets that might not be realistic.

The study findings also suggest that the failure to implement knowledge transfer and the impact of trouble some historical relationships and events can thwart even well designed partnerships in the water sector.

5. Al-Rashed & Abdel-Jawad (2009): **"Public–private partnership in water desalination**"

This article illustrates that historically, governments have the largest share of funding for investments in water resources projects. These projects include water supply and sanitation, communications, agriculture and industrial sectors. Due to the various enormous estimates for future investments in the water sector, domestic and international private firms/investors will be the largest contributors to these requirements.

Countries located in arid regions and suffer from water scarcities, rely on non-conventional water resources to meet the needs of almost all sectors. Today, desalination of seawater, in particular, offers a cost- effective supply of freshwater for these countries. This paper reviews some case studies of BOOT projects and PPP criteria for successful water BOOT projects.

6. Rabi (2013): " **Review and analysis of private sector participation modalities in water service delivery with the emphasis on the southern Mediterranean region".**

The main objective of the current study is to contribute in developing a better understanding of the potential for Private Sector Participation (PSP) in Water Supply Services Delivery, with emphasis at the local level and at the financial sustainability. More specifically, the Study aims at enhancing the knowledge of the local authorities on the main challenges and opportunities related to the PSP in water service delivery; identifying the necessary steps for creating / further improving the enabling environment for PSP including the legislative, institutional and capacity of involved stakeholders and providing advice on tested financial sustainability mechanisms that are necessary for functional/effective PSPs in water service delivery.

3.2.3 : Foreign Studies

1. Davis (2005): "**Private sector participation in the water and sanitation sector**"

This paper examines experience with private-sector participation (PSP) in the water supply and sanitation (W&S) sector. Common ideological, theoretical, and practical justifications for and objections to PSP in water and sanitation are presented. Review of empirical evidence suggests that where gains in efficiency, investment, and environmental stewardship have been realized through privatization, they have often been achieved through unpopular yet predictable strategies such as retrenchment and tariff increases. Challenges persist regarding ensuring access to and affordability of services for low-income households during privatization, and evidence suggests that PSP will not benefit the majority of the 1.2 billion people who lack access to improved water supply and live in the world's poorest countries.

2. Kayaga & Zhe (2007): " **Analysis of public–private for China's water service**"

This article illustrated that the number of water and wastewater infrastructure projects financed through PPPs had risen to over 130 by the 2004 in China, with an investment commitment of over US$ 408 billion, PPPs still accounted for less than 2% of total investments in the water sector. An institutional analysis was conducted in 2005 to find out how conducive PPPs are for provision of water services in Longgang, a coastal town in the Zhejiang Province of China. Although the operational performance indicators were generally above average, subjective assessment of the internal environment uncovered several gaps, which could be addressed by adopting an appropriate mode of PPPs. This

paper showed how an existing institutional analysis framework could be adapted for assessing the suitability of introducing PPPs in water utilities.

3. Dijk (2008): "**Public–private partnerships in basic service delivery: impact on the poor, examples from the water sector in India***"*

The article analyzed the factors contributing to the success of PPPs. Evidence concerning India used to assess which factors played a role and to suggest a PPP dialogue in India, which would involve all stakeholders before actually embarking on PPPs for urban infrastructure projects such as drinking water and sanitation. It would help to do projects in such a way that they would also benefit the urban poor.

4. Grimsey and Lewis (2008): **Public Private Partnerships and Public Procurement**

This article examines this evolving marketplace. It begins by comparing conventional forms of public procurement with traditional PPPs, and then reviews the relative performance, and advantages and disadvantages, of these alternatives. PPPs are argued to introduce very different incentive structures and responsibilities into the procurement process. Nevertheless, traditional PPP models have some well- recognized limitations. Against this background, the article considers these problems and the new hybrids of PPPs and traditional procurement that have been developed, and experimented with, to address these issues. Consequently, there are no hard and fast rules as to what situations work best for PPPs. The real question is what particular procurement option, which may or may not be a PPP variant, is appropriate for the project on hand.

*5. Nyagwchi (2008): "**South African Public Private Partnership (PPP) Projects**"*

The aim of the research was to contribute to the PPP body of knowledge; contribute further understanding of the performance of PPP projects in South Africa; and develop a systemic model for a sustainable PPP system within the country and beyond. Key empirical evidence from the research indicates that South Africa has developed a robust policy and regulatory framework for PPPs; has an inadequate level of PPP awareness and training; and lacks the project management capacity to facilitate deal flow. The findings from this research make an invaluable and original contribution to the PPP body of knowledge, provide insight for further research in this important field, refine the understanding of operational PPP projects, and provide direction for policy and decision makers in the public and private sectors, within South Africa and beyond.

6. Erfani (2011): **"Applying Public Private Partnership on Water Projects: Espirito Santo, Brazil"**

This thesis express the survey result to assess the feasibility of a present project to mitigate some shortfalls of drinking water and wastewater services the State of Espirito Santo. There are some suggestions for better investment and operating cost strategies by use of incorporated evaluation of the fiscal, distributive, economical as well as the risk,

which distributes within the project. The thesis outcomes show that the plan is projecting to generate substantial economic benefits to the society by reducing the pollution although in its present state, it is not probable to be fiscally viable. In addition, the key in improvement of the financial sustainability and perhaps the profitability of the system is directly related to enhancements in operating and management performs, which concentrate on the subjects of water discharge, billing and groups.

7. Chłosta (2012): **"Public-Private Partnerships in the Water Sector: A Comparison between Poland and Portugal"**

In This thesis the PPP development in two completely distinct European Countries have been compared, Portugal with its 30 years of experience dealing with all kinds of PPP projects, and having a significant number of successful (and unsuccessful) cases and Poland which has recently entered the PPP sector the purpose of this analysis was the comparison of this procurement model in both countries and the discussion of key issues and virtues associated with it, in particular concerning the access to the market, risk sharing and risk transfer and contract management. The limitations of this type of projects within the water and wastewater sector have been also identified and good practices will be highlighted. Two real cases have beenstudied for a better understanding of the implementation of these projects.

8. Taye & Dada (2012**): "Appraisal of Private Sector Involvement in Infrastructure Development in Lagos State, Nigeria"**

The aim of this research is to appraise the involvement of the private sector in infrastructure development in Lagos State through the use of the public-private-partnership. The results of the study indicate that the levels of awareness of private sector involvement in infrastructure development using PPPs as well as the areas of involvement were not significant. It is recommended that government should put more efforts to improve the level of awareness on the involvement of the private sector participation in the provision of infrastructure. through public enlightenment both locally and internationally stating the benefits that are obtainable both for citizens and investors.

9. Jakutyte (2012): **"Analyzing Public-Private Partnership"**

The aim of the paper is to analyze the concept of public private partnership and its suitability for a procurement of a public project. The objectives of the thesis are achieved by reviewing the relevant literature and performing an analysis on the case study by examining the different procurement approaches available for the project: PPP and conventional procurement. The analysis answered which procurement approach should be the appropriate one for the case study concerned.

10. Storto (2013): "**Are Public-Private Partnerships a Source of Greater Efficiency in Water Supply? Results of a Non-Parametric Performance Analysis Relating to the Italian Industry"**

This article reports the outcome of a performance study of the water service provision industry in Italy. The study evaluates the efficiency of 21 "private or public-private" equity and 32"public" equity water service operators and investigates controlling factors. In particular, the influence that the operator typology and service management nature private vs. public has on efficiency is assessed. The results show that the integrated water provision industry in Italy is characterized by operational inefficiencies of service operators, and scale and agglomeration economies may have a not negligible effect on efficiency. In addition, the operator typology and its geographical location affect efficiency.

3.2.4 Comments and Conclusion:

This study sheds the lights on the PPP concepts and presented the different models of PPP and identified the attributes of effective PPP, presented the role of PPP in water and wastewater sector, assessed and analyzed the critical success factors of PPP projects like most of the previous studies, but more distinguish this study that it develop a strategic framework of relationship management for PPP projects for better managing the partnerships and relationships in PPP, and to improve PPP performance in large-scale water and wastewater projects in Palestine. In addition, the 9 variables which this study focuses on, are not mentioned as a set in one of the previous studies. Some of previous studies' researchers mentioned the variables but here the researcher takes the most important variables that affected the applying PPP successfully in Palestinian Water and wastewater sector. This research focuses on assessment of the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.

In conclusion, large number of previous literature indicated increase importance of studying PPP arrangement and the factors that affecting on successfully applying it. However, the factors that affecting on successfully applying PPP in water and wastewater sector have not been fully investigated in Palestine.

The researcher hopes that this study will fill the gap and examine the factors that affecting on successfully applying PPP in water and wastewater sector and its importance to improve the water and wastewater services in Palestinian Governorates.

3.3 PPP Experiences

This chapter presents 3 case studies from Palestine, Jordan and Israel in order to study the efficiency of PPP different models in the management of desalination and wastewater treatment and reuse projects to improve the water and wastewater services. The chapter covers also current practices of Relationship Management in PPP, Critical Success Factors (CSFs) in Jordan and Israel.

3.3.1 Case Study (1): The Management Contract Service Improvement Project - Gaza I Project

3.3.1.1 Background

The Gaza Management Contract, one of the first private sector initiatives in the Middle East water sector, used n innovative contracting out strategy to overcome the limitations posed by weak local regulatory capacity **(Saghir, Sherwood & Macoun, 2009).** Responsibility for water services was fragmented among four municipal water departments, twelve village councils, and the United Nations Relief and Works Agency.

There was no accurate accounting of water production or consumption, though estimates put daily per capita consumption at less than 70 liters, well below levels in countries with similar incomes. About half of the water supplied was unaccounted for-the result of system losses, illegal connections, and nonfunctioning meters **(Saghir et all ,2009).**

In mid-1996 Lyonnaise des Eaux/Khatib and Alami (LEKA) was awarded a four year water services management contract to help local govsulting ernment service providers and the Palestinian Water Authority improve water service. The contract is the first of its kind in a World Bank funded project in the Middle East.

The project objectives were to improve quality of water supplied and treated wastewater, Improve quantity of water available, Improve management of water and wastewater services and Promote the appropriate institutional setup through which a unified water utility will perform water and sewage services as a replacement to the current fragmented structure. The beneficiaries from this project were 16 Municipalities and Village Councils in Gaza Strip and the Palestinian Water Authority.

Towards the implementation of this project, PWA created a various necessary bodies. This includes the establishment of the Project Management Unit (PMU), formation of the Technical Counterpart Team (TCT), the appointment of the Regional Coordinators (RC), the appointment of the auditor and the formation of the Steering Committee (SC).in the contract with respect to the setup of necessary institutional framework **(PWA, 1997)**

The project achieved the key targets of water and sanitation services improvements in spite of the complicated political and economic circumstances. Here are the main outputs and achievements derived from the WB and PWA completion report **(Word Bank, 2003)** :

- Improving the system efficiency from 50% to 60%. This was achieved through establishing systems for leak detection, meter repair and replacement, auditing the meter reading and data input, conducting training programs and installing district meters for better management. All of these systems helped to raise the level of expertise among the municipal staff.
- Improving the billing and collection departments throughout the various municipalities. This helped in increasing the customers willing to pay.

- The project contributed in replacing more than 30% of the customer service connection. This has reduced the losses and reduced the vulnerability of the drinking water from pollution.
- Beside reducing the unaccounted for water, meter replacement and repair (50% of customer meters) helped in ensuring social equity and raise the concern of the customer of customers to conserve water.
- The project resulted in the formulation of the Coastal Municipalities Water Utilit (CMWU). The Legally the utility has been established under the ministerial decree, which was issued by the Minister of Local Government. In order to strengthen the utility, the World Bank has expressed its commitment to finance a second phase known as Gaza II which is called (GEWP) .
- The upgrading of the wastewater treatment plants and sewage system collection has raised the potential for wastewater reuse due to the improvement of the effluent quality since the treatment plants were not overloaded before the year 2002.
- The public health was of prime concern. This was done through implementing a very successful disinfection program for drinking water and disposed effluent to the bathing water in Gaza city especially during summer season.
- Throughout the project a comprehensive training program was conducted. This program covered engineers, technicians, managers, administrators, financial staff, water scientist and on top of that the mayors of the municipalities.

The overall challenges and limitations for the project were a volatile political situation, fragmented institutional setup of the sector and unclear role of PWA, lacking information and data about the actual situation of the water and waste water systems, actual responsibility for service provision remained with municipalities, the relatively low level of expertise among the municipal employees., Procurement problems due to continuous closures of borders **(ACWUA, 2014; Al Jamal; 2003).**

3.3.1.2 Success Areas

The main success areas of the project were:

- The high level of support from the municipalities as their staff was involved in the various stages of the project preparation and implementation.
- The effective management practice and continuous follow up of the project's management unit (PMU).
- The high technical standard of the operators' personnel.
- Conducting the tasks of the project in a highly professional manner with the best Management Practice.
- The constructive cooperation between (municipal team), LEKA, and the Palestinian Water Authority.
- Water quality has improved, water losses have fallen, and consumption and revenues have increased.
- The experience was a successful one that only needed improvement **(Al Jamal, 2003; Saghir et all , 2009)**

3.3.2 Case Study (2): As Samra wastewater treatment plant (SWWTP)-Jordan.

3.3.2.1 Background

Jordan, in particular, suffers from a severe water scarcity problem, with an increasing demand for water resulting from escalating population growth and economic development **(istarihi, Al Refai, Al Qaid & Qeed, 2012).**

With a fast growing population and an expanding agricultural sector, the demand for alternatives of fresh water resources remains imminent **(Myzograj& Qteishat, 2011).** As Samra wastewater treatment plant (SWWTP) was originally planned to provide significant quantities of irrigation water to farmers in the Jordan Valley to free fresh water resources of the Valley for domestic users in the Amman and Balqa regions. In addition, the plant was designed to improve environmental and health conditions in the surrounding areas to serve approximately two million residents in Amman and Zarqa **(Mistarihi et all, 2012).**

The plant was constructed in 1985 with a capacity of about 67 000 m3/d. and the PPP which was the first BOT contract in Jordan awarded in 2003 with Private sector construction and 25 year O&M . The contract was awarded through an international water competitive tender ton US/French consortium operating under the name of Samra Plant Consortium (SPC) to build a new wastewater plant in Jordan with a modification and expansion of the Ain Ghazal pre-treatment facility. It also involved the maintenance of the main pipeline which collects wastewater from Amman, the capital city, and surrounding suburbs The partners in the project include Ondeo, Ondeo-Degremont and Morganti of the US. The project is completed in 2008, SPC will operate and maintain the plant for 25 years before the ownership goes to the government **(SPC, 2014).**

On the public side of the partnership, a Program Management Unit (PMU) was originally established by the MWI to serve as a management tool to assist the ministry in various strategic activities of overseeing and managing this project, representing the public partner **(Mistarihi et all, 2012).**

To address the need of a growing population the Government of Jordan decided in 2009 to expand the plant, the BOT contract for expansion entered in to force on July 2012. moreover, the expanded plant is expected to meet the wastewater treatment needs of the 3.5 million inhabitants of greater Amman and surrounding areas trough to 2025 **(SPC, 2014)** . As Samra's expansion included construction of a new mechanical treatmentplant equipped with state-of-the-art technology able to treat effluent for agricultural reuse, produce fertilizer from sludge as well as generate clean energy. Treated effluent is sold to the Ministry of Water and Irrigation, to be used by farmers in the Wadi Dhleil, the Jordan Valley and the King Talal Reservoir areas.

3.3.2.2 Success Areas

Treated wastewater for agriculture usage, which represents approximately 10% of the water supply available in Jordan, freeing up fresh water for more valuable use.

- Very high water quality produced through professional operation and maintenance and expected to reach 134 m3/year. The quality is incompliance with international effluent standards.
- 70% of the total treated wastewater in Jordan produced from the plant and treated the sludge from septic tankers unloading in Ain Gazal pre-treatment plant.
- 95% energy self-sufficiency through hydro energy and biogas production. Only 5% is drawn from the national grid.
- The implementation of the project is part of the global strategy that delivers a powerful tool for the development of the country's economy and its people. The strategy is boosting the economy of Jordan by providing high quality treated water to augment natural flows for irrigation in the Jordan Valley, by recruiting staff almost exclusively from Jordan, giving priority to those from local communities and the low cost of the treatment is part of the strategy to boost the economy, the participation of international donors together with the innovate nature of financing and the plant's energy recovery features contribute to make the treatment cost more affordable, the total cost of treatment per cubic meter is the lowest in Jordan.

The project is based on the principles of sustainability, accountability, team work and Integrity to support the development of the economy, As Samra employees uphold the principles which have lead its sponsors to excellent.

- A comprehensive quality assurance program as the safety of the public and staff is a top priority, the best industrial practices are applied to reduce and mitigate the residual risk associated with treatment activities, methods and management aim to ensure and promote a safety culture for everyone.
- New and adopted technologies have resulted in significantly reduced carbon emission since 2008.
- As Samra plant implemented advanced solutions for wastewater and residual sludge treatment , Groundwater resources are protected and the water produced allows for a considerable reduction in the use of water from fossil aquifers.
- Positive change in the local ecosystem, biodiversity has increased notably, with tangible impacts: some birds returned to this part of Jordan.
- The Project support government policy for renewable energy, the plant is the biggest Jordanian energy producer using biogas (9 MW capacity) and the largest Hydraulic energy producer with its Pelton & Francis turbines (4 MW capacity).
- The expertise and the skills available in various fields including management, technical, financial, Communication, quality, crisis management, etc…. is the legacy of more than half a century of operations around the world.
- This plant is the first wastewater treatment facility in the Middle East to use a combination of private, local government and donor financing. Closing the financing of expansion proved the feasibility and demonstrated the significant benefits of combining private sector with grant funding in a scheme **(SPC, 2014).**
- The project company has established a sound and productive relationship with stakeholders including. Ministries, related organizations, NGO's, private sector

and local communities which will be long- lasting. Communication target different audience and create new dialogues different audiences and create new dialogue aimed at improving performance of all partners and anticipating future challenge **(Russin, 2014).**

- The general legal framework for PPP is developing but is proving difficult to put in place Initially, the Privatization Law (No. 25 of 2000) provided a framework for private sector activities in all sectors its focus on the sale of state-owned enterprises did not give a sufficient legal basis for private sector participation in water and wastewater services **(Abu Shams& Awamleh, 2004).**
- Jordan signed an agreement with the Multilateral Investment Guarantee Agency (MIGA) in 1994 and has been a member ever since. MIGA is a multilateral risk mitigation, insuring investors against political or noncommercial risks, Mediating disputes between investors and governments, Advising governments on attracting investment and sharing information through online investment information services. As-Samra Wastewater Treatment Plant Company Ltd. is an example of a guarantee project by MIGA in Jordan. guarantee is for a period of up to 15 years against the risk of breach of contract.

3.3.3 Case Study (3): PPP Sea Water Desalination Projects in Israel

3.3.3.1 Background

Israel has a successful record of accomplishment of PPP projects developed across a number of sectors by various procuring authorities. Projects have been implemented in the roads, light rail and desalination sectors.

(Fig 4.1). This, combined with a sophisticated domestic banking sector with a track record in PPP lending and the capacity of the Israeli government to commit to PPP payments, make Israel a mature PPP market

The Government Interests for getting into PPP world can be summarized in :

Permanent growth, Outsourcing of Government services and optimization that can be translated into economic Efficiency.

the vision for Israeli Government is**:**

- Investments in infrastructure would enable to sustain Israel's economy growth.
- Private sector's involvement would improve level of government's supplied services.
- Optimizing risk allocation between the public and the private sectors would contribute to public wealth
  (IMOF, 2011).

The water scarcity is a major concern in Israel, a country subject to arid and semi-arid climatic conditions.

Water consumption exceeds the natural rate of replenishment and pollution loads intensify pressure on water resources. To respond to these challenges, Israel has implemented an advanced water pricing policy and has encouraged innovation in water-related technologies. As the water crisis has deepened, following several consecutive years of drought, more emphasis has been placed on increasing supply through anextensive programs of seawater desalination **(OECD, 2011).**

Through desalination, Israel has created the possibility of transforming the region in ways that were unthinkable just a few years ago Israel's desalination facilities are essential to sustainable potable water supplies in the State, since they supplement the severely limited natural resources to a level that meets existing national potable water demands. Desalinated supplies will allow Israel to close the gap between national water supply and demand by 2014 **(IWA, 2010).**

Figure (3.1) shows the investments by sector which is the total investments in PPP projects in Israel is 5 Billion US$.

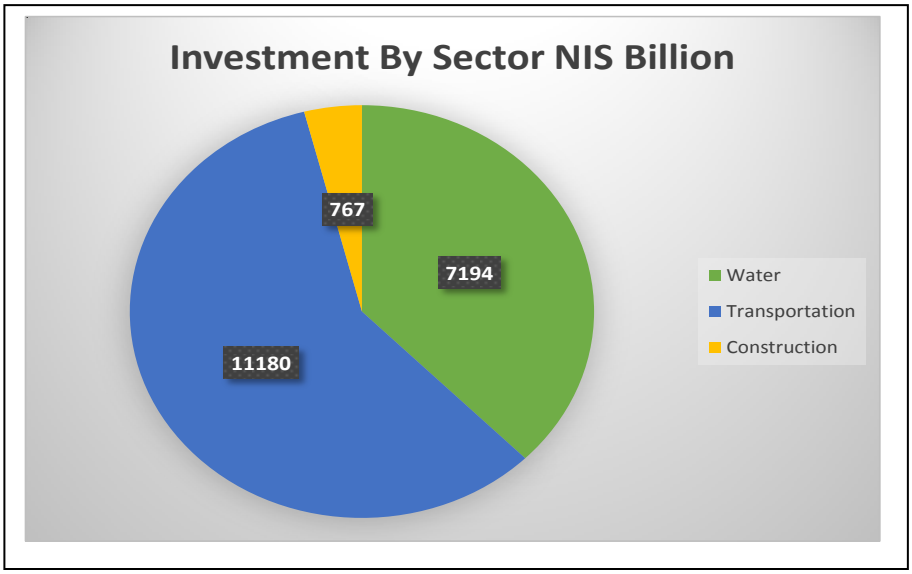

Figure (3.1): Total investment in PPP projects by sector in Israel. (IWA, 2014)

Since 1998, 11 PPP projects have been operational or under construction, the total investment value of these projects is estimated at c. 19 NIS billion ($5 billion) and the total investment in water desalination is approximately 1.9 $billion. In addition, there are seven projects in different procurement stages these days. **(IWA, 2014)**

3.3.3.2 General success areas in PPP Sea water desalination Projects in Israel.

- Stable macro-economic conditions (fiscal and debt position, sovereign credit rating and balance of payments position) place Israel in a favorable position to continue expanding its use of Public Private Partnership (PPP).
- A successful track-record of PPP projects is being developed across a number of sectors by various procuring authorities.
- Difficulties have arisen in projects where preferred bidders have been selected and contracts awarded prior to key issues being resolved.
- Israel's legal system is one of the most highly developed in the Mediterranean partner region and is capable of meeting the needs of complex PPP transactions.
- Despite the absence of a legal framework specific to PPPs in Israel, the general legal framework accommodates PPP procurements through a number of channels.
- Project-specific laws are enacted where required to provide the legal powers for entering into contracts between the public authority and the private sector partner. The general law, project specific laws and the contractual agreements will govern the relationships between the project parties.
- Israel has a sophisticated approach to planning and procuring PPP projects and has developed a significant PPP programme in a variety of sectors.
- Making institutional roles and responsibilities clearer by defining the roles of particular institutions better will prevent duplication of effort and improve pre-procurement preparation.
- A general set of legal provisions is applicable to public procurement in general and these can be suitably adopted for PPP procurement. PPPs are procured under the Mandatory tenders Law 5752-1992.
- The current procurement legislation allows procuring authorities to negotiate elements of the PPP contract with the bidders.
- Risk allocation between the public and private sector tends to follow international practice. Both the government entities and their private sector partners have become increasingly adept at managing the risks and the process of PPP procurement.
- Contractual terms in Israeli PPPs have begun to standardize as procuring authorities and the market have become more adept at managing the risks common to PPP projects.
- Hedging of the financial risks in the payment mechanism appears to offer the best value for money to the Israeli government.
- By striking the right risk balance in the PPP Contract, coupled with a competitive bidding procedure, the public sector will ensure that the private sector offers the best price there by maximizing its value for money.
- Israel’s tax and accounting regulations enable Project SPVs to have effective capital structures, so that project payments can be made as efficient as possible.

– Project finance practices in Israel recognize the full range of securities familiar in the financing sector internationally PPP Desalination projects in Israel **(EIB, 2011 a); (EIB, 2011b).**

The long-term construction program for large-scale reverse osmosis seawater desalination began to contribute potable water to Israel's national water grid in 2005 when the Ashkelon plant, at the southern end of the country's Mediterranean coast, began operation **(OCED, 2011),** currently the PPP desalination plants in Israel are four plants in operation Ashkelon, Palmachim, Hadera and at Sorek (Largest PPP Desalination Plant in the World) , and another plant under construction in Ashdod for a Total of NIS 7.5 billion. The active Seawater desalination plants have a production capacity in excess of 70% of drinking water for domestic use in the State of Israel **(IMOF, 2013).**

In tenders for the construction of large-scale desalination plants, energy efficiency is maximized through a bidding system that promotes energy conservation in different ways, including giving preference to natural gas (rather than use of coal) and to efficient technological energy recovery systems. Israel's desalinated water production is therefore among the most energy-efficient (3.5 kWh/m3) and cost-efficient (USD 0.54/m3) in the world, Most of the country's desalination plants have been, or will be, privately financed as build operate transfer (BOT) projects **(OCED, 2011).**

The following table No. (3.1) shows the 5 large scale desalination PPP projects in Israel with Total capital investment of $1.9 billion with total water production capacity of 587 M M3.

Table (3.1) : Seawater Desalination –PPP projects in Israel (IWA, 2014)

Project	Size (million M3)	Investment ($ million)	Investor	Financing ($ million)	Finance Providers
Ashkelon Desalination	120	325	IDE (50%) Veolia (50%)	260	Bank Leumi
Palmachim Desalination	90	250	GES (100%)	200	Bank Hapoalim
Hadera Desalination	127	425	IDE (50%) Shikun & Binui (50%)	340	EIB Calyon BES Bank Hapoalim Bank Discount
Sorek Desalination	150	450	IDE (51%) Hutchinson (49%)	360	Bank Leumi Bank Hapoalim EIB
Ashdod Desalination	100	400	Mekorot (100%)	320	Bank Hapoalim EIB

3.3.4 Conclusion and Lesson Learned

A number of important lessons can be drawn from the three cases. Common lessons include:

- Risk transfer lies at the heart of effective PPP design. If a good balance is not achieved it will result in increased costs and the inability of one or both parties to fully realize their potential.
- The need for sustained political support and commitment is clearly demonstrated particularly for large projects and ones representing a first attempt at developing and implementing a PPP project.
- It is important the need for an enabling and well defined legislative and regulatory environment. This allows contracts to be determined with certainty and allows the parties to understand the boundaries of interactions.
- Given the complex interactions between service provision and financial viability, it is crucial for all sides to correctly estimate project parameters. Especially on transport projects, there are a multitude of examples of unsuccessful projects which failed due to poor demand or cost forecasting.
- Sustainability of the water and wastewater services could not be achieved if it is not conducted professionally by a high level of management expertise and in close cooperation of all concerned parties.
- In order for PPP contracts to be executed effectively there has to be a supportive leadership within the government; political and economic stability; and clear institutional framework

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

The Main Purpose of this study is to assess the features of the environment that enabling a successful PPP in Palestinian water and wastewater sector and the potential constraints. To reach this requirement, a sound and reliable research methodology should be developed for the research project. This chapter describes the methodology that was used in this research. The adopted methodology to accomplish this study uses the following techniques : population and sample stratum; research design; Questionnaire design; instrumentation; procedures for data collection, and procedures for data analysis.

4.2 Research Methodology:

The adopted methodology in this research is descriptive analytical. Literature on PPP both locally and internationally were reviewed also data for the current situation for Palestinian water and wastewater sector were gathered from PWA's reports.

From the literature review representative case studies were selected from Middle East. The selected three cases included unique features such as having particular success. These cases consist of international experiences.

The findings from the case studies enable us to verify and triangulate the findings from the other sources of data collection used in this study.

4.3 Data Collection:

In order to collect the needed data for this research , the researched use the secondary resources in collecting data such as scientific journals and academic magazines , Thesis and dissertations accessed through the universities' libraries, text books and research papers, annual reports, news, Internet articles and websites.

In addition to preliminary resources that not available in secondary resources through distribute questionnaires on study population in order to get their opinions about applying a successful public private partnership .

Research methodology depend on the analysis of data on the use of descriptive analysis, which depends on the poll and use the main program Statistical Package for Social Sciences (SPSS) and presenting of three real case studies in the sector as examples of successful PPP in water and wastewater sector.

4.4 Population and sample size:

The population will include 400 experts which they are high qualified with more than 15 years' experience in the field of water and wastewater projects and working as general managers of directorates and managers of departments in PWA and service providers in West Bank and Gaza which they are estimated of 200 employee.

Water and waste water projects directors working in international organization in West Bank and Gaza as UN organizations; UNICEF, OCHA, UNRWA, WHO, UNDP, UN-Habitat. ACF, CARE, GVC, International Relief, OXFAM, Save the children, Islamic

Relief, CHF, and International Relief and Development and local organizations as PHG, Maan and IWE which they are estimated of 100 director .

Managers of local private sector companies working in Palestinian water and waste water sector for 15 years which they are estimated of 50 manager.

Professors working in Palestinian universities and have high experience in the field of water and wastewater sector which they estimated of 50 professor.

The research will use comprehensive universal survey for all these experts To ensure good representation of each stratum, the percentage of representation within strata was calculated as shown in Table no (4.1).

Table (4.1): percentage of representation within strata

No. of Population /Sample	Number of distributed questionnaires	Number of respondents	Number of valid respondents	Percentages
400	200	178	178	89%

4.5 Research Tools:

4.5.1 Secondary Data

The researcher has used plenty of secondary data resources to gain maximum information regarding the application of PPP . The used secondary included:

1. Scientific journals and academic magazines such as Research Management, and Research administration journals.
2. Thesis and dissertations accessed through the universities' libraries.
3. Text books and research papers.
4. Internal documents of the investigated companies such as annual reports, news.
5. Internet articles and websites.

4.5.2 Primary Data

The primary data is information that was collected through questionnaire survey.

4.6 Research Design

The first phase of the research thesis proposal included identifying and defining the problems and establishment objective of the study and development research plan. The

second phase of the research included a summary of the comprehensive literature review on PPP management in water and wastewater sector .

The third phase of the research included a field survey which was conducted on the applying a successful public private partnership in Palestinian water and wastewater sector.

The fourth phase of the research focused on the modification of the questionnaire design, through distributing the questionnaire to pilot study, The purpose of the pilot study was to test and prove that the questionnaire questions are clear to be answered in a way that help to achieve the target of the study.

In addition, it was important to ensure that the information received would be useful in achieving the research objective. The questionnaire was modified based on the results of the pilot.

The fifth phase of the research focused on distributing questionnaire. This a way that help to achieve the target of the study. The questionnaire was modified based on the results of the pilot study. The questionnaire

was used to collect the required data in order to achieve the research objective. The sixth phase of the research was data analysis and discussion. Statistical Package for the Social Sciences, (SPSS) was used to perform the required analysis. The final phase includes the conclusions and recommendations.200 questionnaires were distributed to the research population and a178 questionnaires are received . Figure (5.1) shows the methodology flowchart, which leads to achieve the research objective.

4.7 Research Location

The research was carried out in Water and wastewater sector in Palestine.

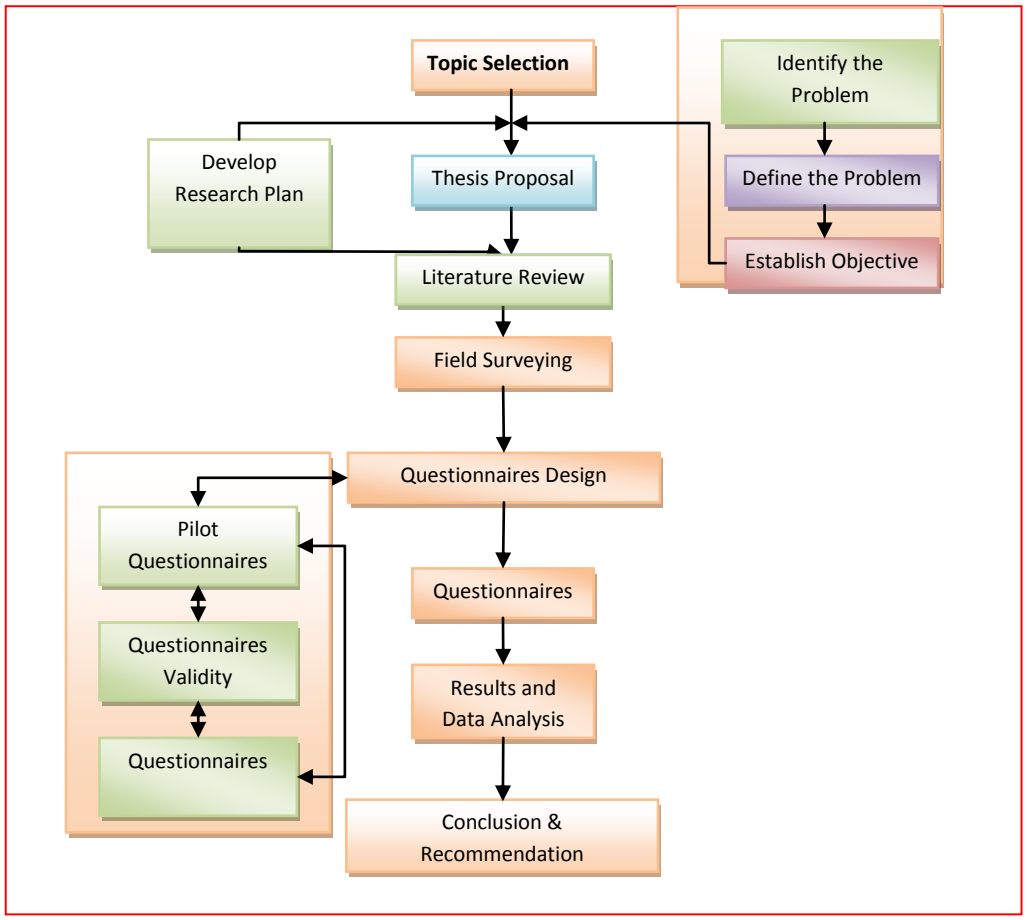

Figure (4.1) illustrates the methodology flow chart.

4.8 Pilot Study

A pilot study for the questionnaire was conducted before collecting the results of the sample. It provides a trial run for the questionnaire, which involves testing the wordings of question, identifying ambiguous questions, testing the techniques that used to collect data, and measuring the effectiveness of standard invitation to respondents .

4.9 Questionnaire Design and Content:

According to the review of literature and after interviewing experts who were dealing with the subject at different levels, all the information that could help in achieving the study objectives were collected, reviewed and formalized to be suitable for the study survey and after many stages of brain storming, consulting, mending, and reviewing executed by the researcher with the supervisor, a questionnaire was developed with closed and open-ended questions.

The questionnaire was designed in the English and Arabic languages (appendix 1), as all members of the target population were familiar with both languages. The questionnaire was provided with a covering letter which explained the purpose of the study, the way of responding, the aim of the research to encourage high response.

The questionnaire design was composed of 3 sections to accomplish the aim of the research, as follows:

1. The first section contained General information about the respondent.
2. The second section contained assessment of the PPP importance, factors of success and potential constraints.
3. The third section was about assessment of the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.

4.10 Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there are an appropriate methods that can be applied and not others. In this research, ordinal scale was used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1,2,3,4,5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels.

Based on Likert scale we have the following:

Item	***Strongly agree***	***Agree***	***Do not Know***	***Disagree***	***Strongly Disagree***
	Very Important	***Important***	***Moderately Important***	***Slightly Important***	***Not Important***
Scale	5	4	3	2	1

4.11 Test of Normality

The One-Sample Kolmogorov-Smirnov Test procedure compares the observed cumulative distribution function for a variable with a specified theoretical distribution, which may be normal, uniform, Poisson, or exponential.

The Kolmogorov-Smirnov Z is computed from the largest difference (in absolute value) between the observed and theoretical cumulative distribution functions. This goodness-of-fit test tests whether the observations could reasonably have come from the specified distribution. Many parametric tests require normally distributed variables. The one-sample Kolmogorov-Smirnov test can be used to test that a variable of interest is normally distributed **(Henry, C. and Thode, Jr., 2002).**

Table (4.2) shows the results for Kolmogorov-Smirnov test of normality. From this table, the p-value is greater than 0.05 level of significance, then the distributions are normally distributed. Consequently, parametric tests should be used to perform the statistical data analysis.

Table 4.2: Kolmogorov-Smirnov test

Field	Kolmogorov-Smirnov	
	Statistic	**P-value**
Success factors and the potential constraints	0.733	0.655
For assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP	0.514	0.954
All paragraphs of the questionnaire	0.617	0.840

4.12 Statistical analysis Tools

The researcher used data analysis both qualitative and quantitative data analysis methods. The Data analysis made utilizing (SPSS 22). The researcher utilize the following statistical tools:

1) Kolmogorov-Smirnov test of normality.
2) Pearson correlation coefficient for Validity.
3) Cronbach's Alpha for Reliability Statistics.
4) Frequency and Descriptive analysis.
5) Parametric Tests (One-sample T test and Analysis of Variance).

T-test is used to determine if the mean of a paragraph is significantly different from a hypothesized value 3 Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance, then the mean of a paragraph is significantly different from a hypothesized value 3. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 3. On the other hand, if the P-value (Sig.) is greater than the level of significance , then the mean a paragraph is insignificantly different from a hypothesized value 3.

The One- Way Analysis of Variance (ANOVA) is used to examine if there is a statistical significant difference between several means among the respondents toward the Applying a successful Public Private Partnership in Palestinian Water and Wastewater sector /Opportunities and constraints due to (Type of your organization, Field of Specialist, Qualification and Years of Experience).

4.13 Statistical Validity of the Questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measured. Validity has a number of different aspects and assessment approaches. To insure the validity of the questionnaire, two statistical tests should be applied.

4.13.1 Internal Validity

Internal validity of the questionnaire is measured by a pilot sample, which consisted of 50 questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole field.

Tables (4.3) through (5.14) present the correlation coefficient for each paragraph of a field and the total of the corresponding field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all paragraphs are significant at $\alpha \leq 0.05$, so it can be said that all paragraphs of each field are consistent and valid to be measure what it was set for.

Table 4.3 : Correlation coefficient of each paragraph of " The attractive factors leading Palestinian government for adopting PPP " and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Sustainable development of Water and wastewater sector in Palestine	.703	0.000*
2.	Protection of water resources from high overexploitation.	.596	0.000*
3.	Restrictions imposed by Israel on the Palestinians access to water supplies.	.370	0.004*
4.	Demand for water and wastewater services is growing due to the rapid population growth.	.485	0.000*
5.	Shortage of government funding and avoid public investment restrictions.	.625	0.000*
6.	Improved quality and efficiency of service provision.	.546	0.000*
7.	Enhance the role of water sector in the economic development.	.680	0.000*
8.	Lack of capacity and expertise in water and wastewater sector.	.602	0.000*
9.	Increase investment in water and wastewater sector	.630	0.000*
10.	Lack of governmental enforcement in revenues collection.	.452	0.001*
11.	Customer satisfaction on the provided services with high quality and affordable prices.	.595	0.000*

* Correlation is significant at the 0.05 level

Table 4.4: Correlation coefficient of each paragraph of " The factors that contribute to the success of PPP projects " and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Stable macroeconomic and political conditions.	.350	0.006*
2.	Favorable legal and regulatory framework.	.576	0.000*
3.	Technical and financial capability.	.694	0.000*
4.	Appropriate project risks management.	.741	0.000*
5.	Commitment and responsibility of public and private sectors.	.638	0.000*
6.	Good governance and good interface management between public and private sectors.	.559	0.000*
7.	Competitive and transparency procurement process.	.470	0.000*
8.	Government involvement by providing guarantees and incentives.	.591	0.000*
9.	Reasonable profit for private sector.	.685	0.000*
10.	Affordability and customer willingness to pay.	.693	0.000*
11.	Reassessment of water tariff system to achieve the balance between customer satisfaction and profit.	.648	0.000*

* Correlation is significant at the 0.05 level

Table 4.5: Correlation coefficient of each paragraph of "Obstacles that may constrain the PPP development in water and wastewater sector" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Inadequate risks management.	.709	0.000*
2.	Political and social obstacles	.611	0.000*
3.	Lack of well-established legal and regulatory framework	.504	0.000*
4.	Lack of local or international financing	.645	0.000*
5.	Both public and private sector lack of appropriate knowledge and skills	.658	0.000*
6.	Higher water and wastewater services cost paid by the customer.	.649	0.000*
7.	Restrictions on local and international investment.	.724	0.000*
8.	PPP projects are be delayed due to political debates and complex negotiation processes	.624	0.000*
9.	Lack of transparency in procurement and contracting processes.	.680	0.000*
10.	Lack of government monitoring on private sector profits	.682	0.000*

* Correlation is significant at the 0.05 level

Table 4.6 : Correlation coefficient of each paragraph of " Legal and regulatory framework " and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Effective and sustainable legal and regulatory framework enhances the development and successful of PPPs.	.722	0.000*
2.	Legal aspects for the private investment is defined in the new water law.	.711	0.000*
3.	The existing policy framework and Palestinian Water Authority strategy support open market access and investment in water and wastewater sector.	.757	0.000*
4.	Develop a specific PPP legislation, guidelines and regulation in Palestine provide adequate opportunity to assess the most effective type of PPP for a given water or wastewater project.	.749	0.000*
5.	Policies relative to PPPs should be consistent with other government policies, legislations etc.	.639	0.000*

* Correlation is significant at the 0.05 level

Table 4.7 : Correlation coefficient of each paragraph of " Institutional framework " and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The current water sector institutional framework enables success and development of PPP Projects.	.708	0.000*
2.	Clear responsibilities of each institution enhance applying PPP projects.	.709	0.000*
3.	Institutions in the framework have the capacity to manage PPP contracts.	.648	0.000*
4.	Transfer more responsibilities to the private sector contributes in development of water and wastewater sector .	.485	0.000*
5.	Establish of specialized unit with sufficient experience supports the success of managing the partnership projects and facilitates managing the relations with the relevant institutions.	.273	0.029*

* Correlation is significant at the 0.05 level

Table 4.8 : Correlation coefficient of each paragraph of "Technical Issues" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The government's experience and capacity in managing similar PPP projects is the major factor of successful PPP Process.	.633	0.000*
2.	Pre-analysis of technical and operational risks in PPP projects lead to effective implementation in all phases of the project.	.617	0.000*
3.	Prepare required technologies, technical specification, Operation and maintenance techniques, and Quality control mechanism of the proposed PPP project contributes in a PPP success and development.	.568	0.000*
4.	Develop of technical performance standards and indicators leads to a successful PPP management and monitoring.	.602	0.000*

* Correlation is significant at the 0.05 level

Table 4.9 : Correlation coefficient of each paragraph of "Risk Management" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Successful PPPs require an effective risk management and better allocation to the best party that can manage them at least cost.	.676	0.000*
2.	Higher risk projects decreases investment levels in PPP projects.	.772	0.000*
3.	A Preliminary analysis and assessment of all possible PPP risks facilitates the transferring and mitigation of risks.	.790	0.000*

* Correlation is significant at the 0.05 level

Table 4.10: Correlation coefficient of each paragraph of "Investment framework" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Current investment framework in Palestine enabling a successful PPP partnership.	.626	0.000*
2.	Removal of constraints on investment and incentives submitted by Government will assist in attracting potential local and foreign investors.	.761	0.000*

3.	Project-specific assistances and guarantees, submitted by the government lead to a successful PPP with the private sector.	.659	0.000*
4.	Define the required investments for water and wastewater sector help the government to develop its strategies and plans for achieving improvement.	.661	0.000*
5.	High demand for high quality service delivery increases demand for private sector investment in PPP projects.	.659	0.000*

* Correlation is significant at the 0.05 level

Table 4.11: Correlation coefficient of each paragraph of "Socioeconomic framework" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Civil society participation in planning of PPP projects contributes in PPP success and services development.	.529	0.000*
2.	Demand forecast for the water and wastewater services contributes in future PPP planning and investment encouragement.	.747	0.000*
3.	Planning for PPP projects have to include the needs of the poor and marginalized with added social welfare purpose.	.764	0.000*
4.	Pre comparison of required revenues and the customer willingness to pay helps in good planning and development of PPP projects.	.644	0.000*

* Correlation is significant at the 0.05 level

Table 4.12: Correlation coefficient of each paragraph of "Consultation with Stakeholders" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The early involvement of all stakeholders in the PPP process at every stage helps development an enabling environment for successful PPP water project.	.804	0.000*
2.	Developing of an effective ways of interacting with stakeholders, and involving them in decision making contribute in PPP success and development.	.853	0.000*
3.	Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation.	.818	0.000*

* Correlation is significant at the 0.05 level

Table 4.13: Correlation coefficient of each paragraph of "Financing Requirements" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Reliable and sustainable financing structure guarantees successful and sustainable PPP water and sanitation services.	.689	0.000*
2.	Donors Contribution and supporting PPP projects encourages private sector to invest in water and wastewater sector.	.813	0.000*
3.	Financial support mechanism by the government (commitment to recover costs , financing available for subsidies or allowing tariffs to increase) should be clear and confirmed to the private sector.	.751	0.000*
4.	Developing a financing plan for PPP in water and sanitation sector assists in planning and implementing PPP projects according needs.	.719	0.000*

* Correlation is significant at the 0.05 level

Table 4.14: Correlation coefficient of each paragraph of "Managing the interface between public and Private sector" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The quality of the relationship between public and the private partner contributes in the success of PPP projects.	.708	0.000*
2.	Establishment of PPP Unit supported by a range of specialists and technical advisors is important for managing and monitoring PPP projects.	.700	0.000*
3.	Monitoring and assessment of the interface management will contribute in improving the performance and increase chances of future PPP in water sector.	.846	0.000*
4.	The key factors to a successful relationship are mutual understanding, open communication, information sharing, and recognition of mutual objectives.	.769	0.000*

* Correlation is significant at the 0.05 level

4.13.2 Structure Validity of the Questionnaire

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of liker scale.

Table (4.15) clarifies the correlation coefficient for each field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all

the fields are significant at $\alpha \leq 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

Table 4.15: Correlation coefficient of each field and the whole of questionnaire

No.	Field	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The attractive factors leading Palestinian government for adopting PPP	.760	0.000*
2.	The factors that contribute to the success of PPP projects	.777	0.000*
3.	Obstacles that may constrain the PPP development in water and wastewater sector.	.893	0.000*
	success factors and the potential constraints	.901	0.000*
1.	Legal and regulatory framework	.592	0.000*
2.	Institutional framework	.491	0.000*
3.	Technical Issues	.530	0.000*
4.	Risk Management	.530	0.000*
5.	Investment framework	.582	0.000*
6.	Socioeconomic frameworks	.613	0.000*
7.	Consultation with Stakeholders	.316	0.014*
8.	Financing Requirements	.668	0.000*
9.	Managing the interface between public and Private sector	.518	0.000*
	For assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP	.821	0.000*

* Correlation is significant at the 0.05 level

4.13 Reliability of the Research

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring **(George and Mallery ,2006)**. The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient **(George and Mallery ,2006)**. To insure the reliability of the questionnaire, Cronbach's Coefficient Alpha should be applied.

Cronbach's Coefficient Alpha

Cronbach's alpha **(George D. & Mallery P, 2006)** is designed as a measure of internal consistency, that is, do all items within the instrument measure the same thing? The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher

values reflects a higher degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table (4.16) shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.516 and 0.902 . This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.915 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table 4.16: Cronbach's Alpha for each field of the questionnaire

No.	Field	Cronbach's Alpha
1.	The attractive factors leading Palestinian government for adopting PPP	0.784
2.	The factors that contribute to the success of PPP projects	0.817
3.	Obstacles that may constrain the PPP development in water and wastewater sector.	0.851
	success factors and the potential constraints	0.902
4.	Legal and regulatory framework	0.749
5.	Institutional framework	0.516
6.	Technical Issues	0.602
7.	Risk Management	0.561
8.	Investment framework	0.690
9.	Socioeconomic frameworks	0.577
10.	Consultation with Stakeholders	0.760
11.	Financing Requirements	0.720
12.	Managing the interface between public and Private sector	0.737
	For assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP	0.833
	All paragraphs of the questionnaire	**0.915**

The Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

CHAPTER 5

DATA ANALYSIS AND DISCUSSIONS

5.1 Personnel Information

5.2 Assessment of PPP Importance, success factors and the potential constraints

5.2.1 The attractive factors leading Palestinian government for adopting PPP.

5.2 .2 The factors that contribute in the success of PPP projects.

5.2.3 Obstacles that may constrain the PPP development in water and wastewater sector

5.3 Assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.

5.1 Personnel Information

In this section, the researcher describes and analyzes the respondents personal characteristics Survey. questionnaire were sent to 200 respondents. Total 178 completed questionnaires were returned and which representing response rates of 89 %.

Table (5.1): Personnel Information (N=178)

Personnel Information		**Frequency**	**Percent**
Type of your organization	Ministries and PWA	73	41
	Service Provider	28	15.7
	Private Sector	26	14.6
	NGO	9	5.1
	International Institutions	22	12.4
	Other	20	11.2
Total		**178**	**100**
Field of Specialist	Wastewater	25	14.0
	Water & Environment	92	51.7
	Finance & Commerce	17	9.6
	Social Activities	7	3.9
	Power & Energy	1	0.6
	Other	36	20.2
Total		**178**	**100**
Qualification	Bachelor	82	46.1
	Master degree	74	41.6
	PHD degree	13	7.3
	Other	9	5.1
Total		**178**	**100**
Years of Experience	Less than 15 years	20	11.2
	15 - Less than 20 years	127	71.4
	20 years and more	31	17.4
Total		**178**	**100**

The respondents are from different targeted organizations working in water and wastewater sector .

The result indicates that both the public and the private sectors were adequately incorporated into the study and balanced opinions from both sectors and different organizations were obtained.

The large no. of them specialized in water, environment and wastewater fields, have Bachelor , Master and PHD degrees and most of them have more than 15 years' experience in water and wastewater sector. Table (5.1) shows that 41 % of respondents are from government (Ministries and PWA) ,15.7 % from service provider and 14.6 % are from private sector. 51.7 % of respondents are water and environment specialist and 46.1 % have Bachelor degree following by 41.6% have master degree which means that there are a high qualified experts are working in the water and wastewater sector, in addition that 71.4 have an experience more than 15 years and less than 20 years so they have high experience in water and wastewater project's management.

5.2 Assessment of PPP Importance, success factors and the potential constraints.

5.2.1 The attractive factors leading Palestinian government for adopting PPP.

Table (5.2) shows the following results:

- The mean of paragraph #2 "Protection of water resources from high overexploitation equals 4.38 (87.50%), Test-value = 21.23, and P-value = 0.000 which is smaller than the level of significance
  $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #8 "Lack of capacity and expertise in water and wastewater sector" equals 3.46 (69.15%), Test-value = 5.96, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$
- The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded conclude that the respondents agree to this paragraph.
- The mean of the field "The attractive factors leading Palestinian government for adopting PPP" equals 4.01 (80.20%), Test-value = 28.07, and P-value=0.000 which is smaller than the level of significance . The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to field of "The attractive factors leading Palestinian government for adopting PPP".

Table (5.2): Means and Test values for "The attractive factors leading Palestinian government for adopting PPP"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Sustainable development of Water and wastewater sector in Palestine	4.29	0.82	85.75	20.77	0.000*	3
2.	Protection of water resources from high overexploitation.	4.38	0.86	87.50	21.23	0.000*	1
3.	Restrictions imposed by Israel on the Palestinians access to water supplies.	3.86	1.03	77.29	11.16	0.000*	8
4.	Demand for water and wastewater services is growing due to the rapid population growth.	4.32	0.78	86.33	22.54	0.000*	2
5.	Shortage of government funding and avoid public investment restrictions.	4.10	0.83	81.91	17.51	0.000*	5
6.	Improved quality and efficiency of service provision.	4.23	0.73	84.61	22.34	0.000*	4
7.	Enhance the role of water sector in the economic development.	3.81	0.82	76.18	13.14	0.000*	9
8.	Lack of capacity and expertise in water and wastewater sector.	3.46	1.02	69.15	5.96	0.000*	11
9.	Increase investment in water and wastewater sector	3.78	0.94	75.57	11.00	0.000*	10
10.	Lack of governmental enforcement in revenues collection.	3.92	0.92	78.31	13.20	0.000*	7
11.	Customer satisfaction on the provided services with high quality and affordable prices.	3.98	0.98	79.66	13.43	0.000*	6
	All paragraphs of the field	4.01	0.48	80.20	28.07	0.000*	

* The mean is significantly different from 3

The researcher noticed that the factor got a higher agreed percentage for the field of "The attractive factors leading the Palestinian government for adopting PPP in water and waste water sector" is " Protection of water resources from high overexploitation" and other factors which had less agreed percentage:

1- Demand for water and wastewater services is growing due to the rapid population growth.
2- Sustainable development of Water and wastewater sector in Palestine.
3- Improved quality and efficiency of service provision.

These findings are matched with National Water Strategy for Palestine Toward Building a Palestinian State from Water Perspective' **(PWA, 2014 a)** and the responsibilities of PWA specified in the new adopted water law **(PWA, 2014)** in terms of creating a climate that stable and conductive to investment with the aim of encouraging private sector investment in the water and wastewater sector especially in non-conventional water resources to meet the growing demand, Enhance upgrading the efficiency of water use and consumption and enhance the efficiency and protect water resources, Encourage the private sector to invest and to participate activity in the national economy, Job Creation and rationalizing of public expenditures.

5.2.2 The factors that contribute in the success of PPP projects.

Table (5.3) shows the following results:

- The mean of paragraph #1 "Stable macroeconomic and political conditions" equals 4.38 (87.68%), Test-value = 24.45 and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$.The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #9 "Reasonable profit for private sector" equals 3.77 (75.48%), Test-value = 11.27, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field "The factors that contribute to the success of PPP projects" equals 4.09 (81.72%), Test-value = 27.91, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to field of "The factors that contribute to the success of PPP projects ".

Table (5.3): Means and Test values for "The factors that contribute to the success of PPP projects"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Stable macroeconomic and political conditions.	4.38	0.75	87.68	24.45	0.000*	1
2.	Favorable legal and regulatory framework.	4.28	0.76	85.62	22.52	0.000*	2
3.	Technical and financial capability.	4.16	0.71	83.15	21.70	0.000*	5
4.	Appropriate project risks management.	3.97	0.73	79.32	17.61	0.000*	8
5.	Commitment and responsibility of public and private sectors.	4.19	0.82	83.71	19.30	0.000*	4
6.	Good governance and good interface management between public and private sectors.	4.09	0.79	81.80	18.40	0.000*	6
7.	Competitive and transparency procurement process.	4.27	0.85	85.31	19.70	0.000*	3
8.	Government involvement by providing guarantees and incentives.	4.09	0.92	81.80	15.87	0.000*	6
9.	Reasonable profit for private sector.	3.77	0.91	75.48	11.27	0.000*	11
10.	Affordability and customer willingness to pay.	3.85	0.91	76.95	12.34	0.000*	10
11.	Reassessment of water tariff system to achieve the balance between customer satisfaction and profit.	3.91	1.03	78.26	11.61	0.000*	9
	All paragraphs of the field	4.09	0.52	81.72	27.91	0.000*	

* The mean is significantly different from 3

The respondents rated eleventh success factors that contribute to the success of PPP projects. The top two success factors got a high degree of agreement:

1. Stable macroeconomic and political conditions.
2. Favorable legal and regulatory framework.

The first high important factor that contribute in the success of PPP projects according to the respondents assessment is the stable macro-economic and political conditions. This result is matching with **Babatunde, Opawole and Akinsiku (2012),** the study discussed and concluded that stable macroeconomic is one of the factors that focused on the successful of implementation of the project which favors both parties and helps to

achieve the objectives of the partnership arrangement. In addition, a stable political condition is an important factor according to the respondent .This is coming in agreement with **Dantas et al. (2006)** that the study confirm the that PPP environment requires the analysis of not only operational but also social, political and economic criteria. These criteria play a major role to achieve success of any PPP project. also with **Qiao et al. (2001)** that confirms the stable political and economic situation is a key success factor of PPP projects.

The second factor that got less priority level is "Favorable legal and regulatory framework". This is coming in agreement with **Jamali (2004)** that confirm that developing country governments need to build their legal and regulatory capacity to effectively foster and participate in PPPs and also is coming in agreement with **Abdel Azziz (2007)** that confirms the availability of a PPP legal and regulatory framework is a critical Success factors for PPP Projects.

The mean values for the success factors as rated by respondents ranged from 3.77 to 4.38. This observation has reflected that the variation in their responses is relatively very low (0.61). The respondents rated all the success factors with mean values more than "3" . All the success factors are ranged between important and highly important. That means all these factors will contribute effectively in the success of applying a PPP projects in Palestinian water and wastewater sector.

5.2.3 Obstacles that may constrain the PPP development in water and wastewater sector

Table (5.4) shows the following results:

- The mean of paragraph #3 "Lack of well-established legal and regulatory framework" equals 4.13 (82.60%), Test-value = 17.77, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #9 "Lack of transparency in procurement and contracting processes" equals (72.77%), Test-value = 8.57, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field "Obstacles that may constrain the PPP development in water and wastewater sector" equals 3.81 (76.26%), Test-value = 18.82, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to field of "Obstacles that may constrain the PPP development in water and wastewater sector ".

Table (5.4): Means and Test values for "Obstacles that may constrain the PPP development in water and wastewater sector"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Inadequate risks management.	3.72	0.83	74.32	11.48	0.000*	7
2.	Political and social obstacles	4.00	0.88	80.00	15.22	0.000*	2
3.	Lack of well-established legal and regulatory framework	4.13	0.85	82.60	17.77	0.000*	1
4.	Lack of local or international financing	3.93	0.84	78.52	14.71	0.000*	3
5.	Both public and private sector lack of appropriate knowledge and skills	3.70	1.02	74.06	9.13	0.000*	8
6.	Higher water and wastewater services cost paid by the customer.	3.72	1.01	74.35	9.44	0.000*	6
7.	Restrictions on local and international investment.	3.66	0.96	73.15	9.11	0.000*	9
8.	PPP projects are be delayed due to political debates and complex negotiation processes	3.91	0.96	78.20	12.59	0.000*	4
9.	Lack of transparency in procurement and contracting processes.	3.64	0.99	72.77	8.57	0.000*	10
10.	Lack of government monitoring on private sector profits	3.73	1.08	74.66	9.04	0.000*	5
	All paragraphs of the field	3.81	0.58	76.26	18.82	0.000*	

* The mean is significantly different from 3

The respondents rated tenth obstacles that may constrain the PPP development in water and wastewater sector. The top obstacle that got a high score and considered the highly important by respondent is "Lack of well-established legal and regulatory framework". This is coming in agreement with **(Bing, 2005; Zhang, 2005)**, it has been argued that success of PPP revolves around availing an adequate and enabling legal and regulatory framework that clearly defines such arrangements. Appropriate legal and regulatory frameworks streamline PPP set up, implementation and outcome. It clearly explains the changed roles, that is redefine the role of government from producing and delivering services directly to facilitating and regulating private sector service provision. **Charles (2006)** discussed that the major constraint being the lack of PPP prerequisites, comprising of policy guidelines, regulatory frameworks, awareness, training and strong

public and/or private sector institutions. The framework is necessary to protect public interest, check abuses, enhance capacity and promote PPPs.

The other important factors according to respondents are Political and social obstacles, Lack of local and international financing and PPP projects are be delayed due to political debates and complex negotiation processes. Such result matched studies of **Forrer et all. (2002)**, **Chan et all (2008)** which focused on potential obstacles of PPP and determined as 1) Misallocation of risks, 2) Private Sector Failure, 3) High Transaction Costs and Lengthy Lead Time, 4) Political/Social Obstacles, 5) Lack of Well-established Legal Framework, 6) Non-conducive Financial Market.

In General "Success factors and the potential constraints ":

Table (5.5) shows the mean of all paragraphs equals 3.97 (79.50%), Test-value = 29.68 and P-value =0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The mean of all paragraphs is significantly different from the hypothesized value 3. It is concluded that the respondents agree to all paragraphs " success factors and the potential constraints ".

Table (5.5): Means and Test values for "Success factors and the potential constraints"

	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
The attractive factors leading Palestinian government for adopting PPP	4.01	0.48	80.20	28.07	0.000*	2
The factors that contribute to the success of PPP projects	4.09	0.52	81.72	27.91	0.000*	1
Obstacles that may constrain the PPP development in water and wastewater sector.	3.81	0.58	76.26	18.82	0.000*	3
All Paragraphs	3.97	0.44	79.50	29.68	0.000*	

*The mean is significantly different from 3

From the opinion of the researcher, this result clarifies that the majority of water and wastewater sector experts from different types of organizations and have long experience in managing water and wastewater projects realized the importance of adopting public private partnership to improve the water and wastewater sector services to the customer with sustainable service, high quality and reasonable price and to cover the

growing demand of Palestinians which suffer from clean, safe and shortage water and to protect the water resources from overexploitation by developing new non-conventional water resources and new arraignments, in addition that the experts are mostly agreed on the success factors and potential obstacles regarding the adopting of PPP in Palestinian water and wastewater sector. These results are convenient with the study of **Mohammed (2007)** that discussed the prospects of private sector participation for a sustainable water and wastewater services in Gaza strip and also with **Bérézіat** (**2009**) that in its fieldwork observation shows how the partners gains incentives from engaging in the partnership which consequently leads to improvement of the sanitation coverage.

5.3 Assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.

The questionnaire was responded by the targeted experts from public and private sector that have the understanding of the PPP arraignments with its different models. By analyzing the perceptions of the PPP environment related to readiness it is possible to take action plan for mitigating the gap, which is required for PPP projects development and implementation. Questions related to PPPs were qualitative in nature. The areas to which this question was focused include Technical Issues, legal, regulatory and policy framework, Institutional framework and capacity, Investment and socioeconomic issues, Stakeholders consultation , Financing Requirements, Risk Management and Managing the interface between public and private in PPP projects.

Hypothesis #1:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for Legal and regulatory framework on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.6) shows the following results:

- The mean of paragraph #5 “Policies relative to PPPs should be consistent with other government policies, legislations etc.” equals 4.09 (81.81%), Test-value = 19.00, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #3 “The existing policy framework and Palestinian Water Authority strategy support open market access and investment in water and wastewater sector” equals 3.27 (65.31%), Test-value = 3.40, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field “Legal and regulatory framework” equals 3.76 (75.19%), Test-value = 16.15, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of “Legal and regulatory framework ".

Readiness and enabling environment for successful PPP in terms of legal regulatory and policy framework indicators ae examined by the respondents as shown in table (5.6).

Table (5.6): Means and Test values for "Legal and regulatory framework"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Effective and sustainable legal and regulatory framework enhances the development and successful of PPPs.	4.02	0.96	80.34	14.07	0.000*	2
2.	Legal aspects for the private investment is defined in the new water law.	3.49	1.09	69.83	5.98	0.000*	4
3.	The existing policy framework and Palestinian Water Authority strategy support open market access and investment in water and wastewater sector.	3.27	1.04	65.31	3.40	0.001*	5
4.	Develop a specific PPP legislation, guidelines and regulation in Palestine provide adequate opportunity to assess the most effective type of PPP for a given water or wastewater project.	3.89	0.80	77.83	14.77	0.000*	3
5.	Policies relative to PPPs should be consistent with other government policies, legislations etc.	4.09	0.76	81.81	19.00	0.000*	1
	All paragraphs of the field	3.76	0.63	75.19	16.15	0.000*	

* The mean is significantly different from 3

The results indicates that most of respondents agreed with high percentage on "Policies relative to PPPs should be consistent with other government policies, legislations etc." Effective and sustainable legal and regulatory framework enhances the development and successful of PPPs.. such result matched studies of **Habibija (2012) , (Rees, 1998)** that confirm that a successful PPP program will likely require a degree of reform by both public and the private to create enabling environment, a critical change related all aspects of PPP governance including legal and policy framework In addition that the regulation in practice is as much about creating the conditions under which private firms can operate effectively and efficiently as it is about protecting specific customer and public interests.

The mean value of the field "Legal, regulatory and policy framework" is equal of 3.76 , The finding shows that the majority of respondents agreed on the factors because all of them rated with a mean value more than 3, as a result on the analysis the researcher conclude that there is a statistical significant effect for Legal and regulatory framework on the applying a successful PPP in Palestinian water sector and wastewater sector is very high at significant level less than or equals 0.05. and this result consistent with the studies of **Public Private Infrastructure Advisory Facility (2003)** and **Moyo (2013)** that confirm PPP success and sustainability requires the right business environment appropriate legal frameworks .

The lack of transparent legal framework or legal uncertainty, due to non-existent and partial legal frameworks, can impede successful project implementation.

Hypothesis #2:

There is a high statistical significant effect at significant $\alpha \leq 0.05$ for Institutional framework on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.7) shows the following results:

- The mean of paragraph #5 "Establish of specialized unit with sufficient experience supports the success of managing the partnership projects and facilitates managing the relations with the relevant institutions" equals 4.28 (85.54%), Test-value = 24.38, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$ The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #1 "The current water sector institutional framework enables success and development of PPP Projects" equals 2.99 (59.77%), Test-value = -0.14, and P-value = 0.885 which is greater than the level of significance $\alpha \leq 0.05$. Then the mean of this paragraph is insignificantly different from the hypothesized value 3. It is concluded that the respondents (Do not know, neutral) to this paragraph.
- The mean of the field "Institutional framework" equals 3.60 (71.95%), Test-value = 14.47, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Institutional framework ".

Table (5.7): Means and Test values for "Institutional framework"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The current water sector institutional framework enables success and development of PPP Projects.	2.99	1.04	59.77	-0.14	0.885	5
2.	Clear responsibilities of each institution enhance applying PPP projects.	3.65	0.96	73.07	9.07	0.000*	3
3.	Institutions in the framework have the capacity to manage PPP contracts.	3.29	0.96	65.80	4.02	0.000*	4
4.	Transfer more responsibilities to the private sector contributes in development of water and wastewater sector .	3.77	1.02	75.37	10.01	0.000*	2
5.	Establish of specialized unit with sufficient experience supports the success of managing the partnership projects and facilitates managing the relations with the relevant institutions.	4.28	0.70	85.54	24.38	0.000*	1
	All paragraphs of the field	3.60	0.55	71.95	14.47	0.000*	

* The mean is significantly different from 3

The finding show that the factor "Establish of specialized unit with sufficient experience supports the success of managing the partnership projects and facilitates managing the relations with the relevant institutions." got a higher agree percentage . This result is reasonable and match with study of **United Nations (2007)** that confirm that the creation of dedicated PPP units has been seen as one such mechanism by which governments can define, regulate and build public sector capacity in regards to PPPs. A lower factor that has got lowest agree percentage according to the experts is "The current water sector institutional framework enables success and development of PPP Projects" with mean of 2.99, this result indicate that the current institutional framework and capacity is not suitable to development of PPP projects in the expert point of view and this result match with **WEF&BCG (2013)** it discussed that the PPPs need a stable legal and institutional framework that if investors perceive serious weaknesses in the legal and institutional framework, they will be reluctant to invest their money in long-term infrastructure projects.

The mean of the field "Institutional framework" is 3.6 that indicates that the respondents agreed that there is a statistical significant effect for Institutional framework on

the applying a successful PPP in Palestinian water sector and wastewater sector is very high at significant level $\alpha \leq 0.05$. This result is consistent with the studies of **ADB (2008)** and **European PPP expertise center (2014)** that confirm that the greater the degree of uncertainty about institutional roles during the PPP process, the higher the level of perceptive risk is likely for potential investors. Most countries have introduced institutional and administrative reforms of public governance in respect of PPPs. With a particular focus on the role and function of PPP Units and with a description and analysis of the roles of the different public institutions that contribute to the development of PPP policy and support project delivery**.**

Hypothesis #3:

There is a very high statistical significant effect at significant level $\alpha \leq 0.05$ for Technical Issues on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.8) shows the following results:

- The mean of paragraph #4 "Develop of technical performance standards and indicators leads to a successful PPP management and monitoring" equals 4.32 (86.35%), Test-value = 28.27, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #4 "The government's experience and capacity in managing similar PPP projects is the major factor of successful PPP Process" equals 4.11 (82.27%), Test-value = 19.19, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field "Technical Issues" equals 4.23 (84.60%), Test-value = 36.70, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Technical Issues ".

Table (5.8): Means and Test values for "Technical Issues"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The government's experience and capacity in managing similar PPP projects is the major factor of successful PPP Process.	4.11	0.77	82.27	19.19	0.000*	4
2.	Pre-analysis of technical and operational risks in PPP projects lead to effective implementation in all phases of the project.	4.20	0.69	84.00	22.85	0.000*	3
3.	Prepare required technologies, technical specification, Operation and maintenance techniques, and Quality control mechanism of the proposed PPP project contributes in a PPP success and development.	4.29	0.57	85.86	29.97	0.000*	2
4.	Develop of technical performance standards and indicators leads to a successful PPP management and monitoring.	4.32	0.60	86.35	28.27	0.000*	1
	All paragraphs of the field	4.23	0.45	84.60	36.70	0.000*	

* The mean is significantly different from 3

Findings show that the respondents are assessed all the factors related to the technical issues with high rate.

The mean for all factors is higher than 4 and the mean of the field is 4.23 with 84.60%, these results indicate that the respondents agreed on that the there is a high statistical significant effect for Technical Issues on the applying a successful PPP in Palestinian water sector and wastewater sector at significant level $\alpha \leq 0.05$. the results match with the study of **Ng et all (2010)** that confirm that the technical and social aspects are crucial to the feasibility of PPP projects when the interests of all stakeholders are taken into account.

Hypothesis #4:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for risk management on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.9) shows the following results:

- The mean of paragraph #1 “Successful PPPs require an effective risk management and better allocation to the best party that can manage them at least cost” equals 4.18 (83.54%), Test-value = 27.09, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #2 “Higher risk projects decreases investment levels in PPP projects” equals 4.02 (80.45%), Test-value = 18.14, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field “Risk Management” equals 4.12 (82.46%), Test-value = 30.29, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of “Risk Management ".

Table (5.9): Means and Test values for “Risk Management”

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Successful PPPs require an effective risk management and better allocation to the best party that can manage them at least cost.	4.18	0.57	83.54	27.09	0.000*	1
2.	Higher risk projects decreases investment levels in PPP projects.	4.02	0.75	80.45	18.14	0.000*	3
3.	A Preliminary analysis and assessment of all possible PPP risks facilitates the transferring and mitigation of risks.	4.16	0.69	83.14	22.08	0.000*	2
	All paragraphs of the field	4.12	0.49	82.46	30.29	0.000*	

* The mean is significantly different from 3

The result of the analysis show that most of respondent assessed the factors related to the risk management with high rates with a mean higher than 4 for all factors , the mean of the field “Risk Management” equals 4.12 with 82.46% . According to the respondents assessment there is a high statistical significant effect for Risk Management on the applying a successful PPP in Palestinian water sector and wastewater sector at significant $\alpha \leq 0.05$. this result is consistent with **NYAGWACHI (2008)** that confirm a key principle of PPPs is that risk should be allocated to the party best able to manage it. The effective allocation of

risk has a direct financial impact on the project, as it will result in lower overall project costs and will therefore provide enhanced value-for-money .

Hypothesis #5:

There is a high statistical significant effect at significant $\alpha \leq 0.05$ for Investment framework on the applying a successful PPP in Palestinian water sector and wastewater sector.

Table (5.10) shows the following results:

- The mean of paragraph #3 "Project-specific assistances and guarantees, submitted by the government lead to a successful PPP with the private sector" equals 4.06 (81.25%), Test-value = 22.24, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #1 "Current investment framework in Palestine enabling a successful PPP partnership" equals 2.78 (55.52%), Test-value = -3.09, and P-value = 0.002 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3. It is concluded that the respondents disagree to this paragraph.
- The mean of the field "Investment framework" equals 3.73 (74.65%), Test-value = 20.23, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Investment framework ".

Table (5.10): Means and Test values for "Investment framework"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Current investment framework in Palestine enabling a successful PPP partnership.	2.78	0.96	55.52	-3.09	0.002*	5
2.	Removal of constraints on investment and incentives submitted by Government will assist in attracting potential local and foreign investors.	4.01	0.73	80.23	18.31	0.000*	2
3.	Project-specific assistances and guarantees, submitted by the government lead to a successful PPP with the private sector.	4.06	0.63	81.25	22.24	0.000*	1

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
4.	Define the required investments for water and wastewater sector help the government to develop its strategies and plans for achieving improvement.	3.94	0.74	78.86	16.84	0.000*	3
5.	High demand for high quality service delivery increases demand for private sector investment in PPP projects.	3.88	0.77	77.51	15.21	0.000*	4
	All paragraphs of the field	3.73	0.48	74.65	20.23	0.000*	

* The mean is significantly different from 3

The respondents assessed all factors of "Investment framework" field with high agree percentage except the factor "Current investment framework in Palestine enabling a successful PPP partnership" with amen equals 2.78 . This result is reasonable and indicate that the current investment framework does not enable applying PPP at Palestinian water and wastewater sector and according to **PALTRADE (2010)** study that concluded Political uncertainty , the movement and access restrictions are the main obstacles impeding investors and foreign direct investment in Palestine.

According to the analysis's results, the respondents assessed the field " Investment framework" with high score with a mean of 3.73 which higher than the hypothesized value 3. This means that there is a statistical significant effect for Investment framework on the applying a successful PPP in Palestinian water sector and wastewater sector is very high at significant level $\alpha \leq 0.05$. This comes in agreement with **Kwak et all (2009)** study that confirm that the willingness of private investors to participate in PPP infrastructure projects depends greatly on the environment in which these projects are operated. Therefore, for PPP to work, the government should create a favorable investment with stable social, legal, economic, and financial conditions.

Hypothesis #6:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for socioeconomic framework on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.11) shows the following results:

- The mean of paragraph #3 "Planning for PPP projects have to include the needs of the poor and marginalized with added social welfare purpose" equals 4.41 (88.16%), Test-value = 27.31, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly

greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.

- The mean of paragraph #1 "Civil society participation in planning of PPP projects contributes in PPP success and services development" equals 4.06 (81.14%), Test-value = 15.94, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to this paragraph.
- The mean of the field "Socioeconomic frameworks" equals 4.25 (84.91%), Test-value = 33.53, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Socioeconomic frameworks ".

Table (5.11): Means and Test values for "Socioeconomic Frameworks"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Civil society participation in planning of PPP projects contributes in PPP success and services development.	4.06	0.88	81.14	15.94	0.000*	4
2.	Demand forecast for the water and wastewater services contributes in future PPP planning and investment encouragement.	4.35	0.64	86.97	27.78	0.000*	2
3.	Planning for PPP projects have to include the needs of the poor and marginalized with added social welfare purpose.	4.41	0.68	88.16	27.31	0.000*	1
4.	Pre comparison of required revenues and the customer willingness to pay helps in good planning and development of PPP projects.	4.16	0.73	83.20	20.93	0.000*	3
	All paragraphs of the field	4.25	0.49	84.91	33.53	0.000*	

* The mean is significantly different from 3

The results show that the majority of respondents rated all factors of the socioeconomic framework with high rate of acceptance with a higher mean than hypothesized value "3" and the mean of the field equals 4.25. This means that there is a high acceptance on that there is high statistical significant effect for Socioeconomic

framework on the applying a successful PPP in Palestinian water sector and wastewater sector at significant level $\alpha \leq 0.05$. This comes in agreement with studies of **Heinke & Wei (2000)** and **Banda (2004)** that confirm that the social acceptance is indispensable in today's society, the government should never commission a PPP scheme for the sake of expediting the facilities or services provision without satisfying the requirements and expectations of the community and the successful implementation private sector participation service delivery arraignments requires a clear understanding of the socioeconomic operational environment .

Hypothesis #7:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for consultation with stakeholders on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.12) shows the following results:

- The mean of paragraph #1 "The early involvement of all stakeholders in the PPP process at every stage helps development an enabling environment for successful PPP water project" equals 4.46 (89.19%), Test-value = 31.60, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #3 "Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation" equals 4.19 (83.77%), Test-value = 22.01, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field "Consultation with Stakeholders" equals 4.32 (86.44%), Test-value = 33.59, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Consultation with Stakeholders ".

Table (5.12): Means and Test values for "Consultation with Stakeholders"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The early involvement of all stakeholders in the PPP process at every stage helps development an enabling environment for successful PPP water project.	4.46	0.61	89.19	31.60	0.000*	1
2.	Developing of an effective ways of interacting with stakeholders, and involving them in decision making contribute in PPP success and development.	4.32	0.60	86.36	29.34	0.000*	2
3.	Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation.	4.19	0.71	83.77	22.01	0.000*	3
	All paragraphs of the field	4.32	0.52	86.44	33.59	0.000*	

* The mean is significantly different from 3

The respondents rated all factors of the "Consultation with Stakeholders" with high agree percentage with a higher mean than hypothesized value "3" and the mean of the field equals 4.32 (86.44%). This means that there is a high acceptance on that there is a statistical significant effect for Consultation with Stakeholders on the applying a successful PPP in Palestinian water sector and wastewater sector is high at significant level $\alpha \leq 0.05$. This result comes in agreement with **Anderson & Janssens (2011)** that discuss and confirm "The failure of a number of PPPs in the 1990s has been attributed to a failure in effective engagement with stakeholders (including customers, civil society, trade unions). Many PPPs failed because stakeholders were not involved in key decision-making processes, some of the more controversial PPPs might have been less risky if such engagement had been designed and implemented from the start with a more responsive process put in place.

Hypothesis #8:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for financing requirements on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.13) shows the following results:

- The mean of paragraph #1 “Reliable and sustainable financing structure guarantees successful and sustainable PPP water and sanitation service” equals 4.37 (87.40%), Test-value = 29.02, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #2 “Donors Contribution and supporting PPP projects encourages private sector to invest in water and wastewater sector” equals 4.19 (83.75%), Test-value = 19.28, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of the field “Financing Requirements” equals 4.27 (85.44%), Test-value = 35.70, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of “Financing Requirements ".

Table (5.13): Means and Test values for “Financing Requirements”

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Reliable and sustainable financing structure guarantees successful and sustainable PPP water and sanitation services.	4.37	0.62	87.40	29.02	0.000*	1
2.	Donors Contribution and supporting PPP projects encourages private sector to invest in water and wastewater sector.	4.19	0.82	83.75	19.28	0.000*	4
3.	Financial support mechanism by the government (commitment to recover costs , financing available for subsidies or allowing tariffs to increase) should be clear and confirmed to the private sector.	4.32	0.62	86.36	28.02	0.000*	2
4.	Developing a financing plan for PPP in water and sanitation sector assists in planning and implementing PPP projects according needs.	4.21	0.55	84.20	29.11	0.000*	3
	All paragraphs of the field	4.27	0.47	85.44	35.70	0.000*	

* The mean is significantly different from 3

The respondents rated all factors of the "Financing Requirements" with high agree percentage with a mean higher than hypothesized value "3" and the mean of the field equals 4.27 (85.44%). This means that there is a high acceptance on the hypothesis no. 8 "There is a very high statistical significant effect for Financial Requirements on the applying a successful PPP in Palestinian water sector and wastewater sector at significant level $\alpha \leq 0.05$. This result comes in agreement with **Farquharson et all (2011)** that confirm that the project finance is often a more efficient way for lenders and investors to finance major infrastructure investments by the private sector as well as increase the availability of financing. It is important for the public authority to understand clearly the overall capacity and capability of the lending markets when implementing a PPP program, and there may be steps it can take to encourage the development of such markets.

Hypothesis #9:

There is a high statistical significant effect at significant level $\alpha \leq 0.05$ for managing the interface between public and Private sector on the applying a successful PPP in Palestinian water and wastewater sector.

Table (5.14) shows the following results:

- The mean of paragraph #4 "The key factors to a successful relationship are mutual understanding, open communication, information sharing, and recognition of mutual objectives" equals 4.53 (90.51%), Test-value = 36.35, and P-value = 0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It is concluded that the respondents agree to this paragraph.
- The mean of paragraph #1 "The quality of the relationship between public and the private partner contributes in the success of PPP projects" equals 4.22 (84.41%), Test-value = 24.32, and P-value = 0.000 which is smaller than the level of significance$\alpha \leq 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It is concluded that the respondents agree to this paragraph.
- The mean of the field "Managing the interface between public and Private sector" equals 4.34 (86.89%), Test-value = 39.43, and P-value=0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It is concluded that the respondents agree on the field of "Managing the interface between public and Private sector ".

Table (5.14): Means and Test values for "Managing the interface between public and private sector"

	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The quality of the relationship between public and the private partner contributes in the success of PPP projects.	4.22	0.67	84.41	24.32	0.000*	4
2.	Establishment of PPP Unit supported by a range of specialists and technical advisors is important for managing and monitoring PPP projects.	4.34	0.66	86.78	26.82	0.000*	2
3.	Monitoring and assessment of the interface management will contribute in improving the performance and increase chances of future PPP in water sector.	4.29	0.65	85.88	26.42	0.000*	3
4.	The key factors to a successful relationship are mutual understanding, open communication, information sharing, and recognition of mutual objectives.	4.53	0.56	90.51	36.35	0.000*	1
	All paragraphs of the field	4.34	0.45	86.89	39.43	0.000*	

* The mean is significantly different from 3

The respondents rated all factors of the "Managing the interface between public and Private sector" with high agree percentage with a mean higher than hypothesized value "3" and the mean of the field equals 4.34 (86.89%). This means that there is a high acceptance on the hypothesis no. 9 this comes in agreement with the studies of **EC (2003)** and **NYAGWACHI (2008)** that confirm that the implementation of any public sector infrastructure project requires a significant level of proactive management of the interface between the national authority and the Contractor in order to ensure that the service is provided in accordance with the precise requirements set out in the project agreement and output specification. The capacity and skills of public administrations have to be broadened to manage and negotiate successful PPP projects.

In General "Assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP ":

Table (5.15) shows the mean of all paragraphs equals 4.03 (80.69%), Test-value = 47.26 and P-value =0.000 which is smaller than the level of significance $\alpha \leq 0.05$. The mean of all paragraphs is significantly different from the hypothesized value 3. It is concluded that the respondents agree to all paragraphs "Assessment, the readiness of

Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP ".

Table (5.15): Means and Test values for "Assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP"

	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
Legal and regulatory framework	3.76	0.63	75.19	16.15	0.000*	7
Institutional framework	3.60	0.55	71.95	14.47	0.000*	9
Technical Issues	4.23	0.45	84.60	36.70	0.000*	5
Risk Management	4.12	0.49	82.46	30.29	0.000*	6
Investment framework	3.73	0.48	74.65	20.23	0.000*	8
Socioeconomic frameworks	4.25	0.49	84.91	33.53	0.000*	4
Consultation with Stakeholders	4.32	0.52	86.44	33.59	0.000*	2
Financing Requirements	4.27	0.47	85.44	35.70	0.000*	3
Managing the interface between public and Private sector	4.34	0.45	86.89	39.43	0.000*	1
All Paragraphs	4.03	0.29	80.69	47.26	0.000*	

*The mean is significantly different from 3

In table (5.15), all paragraphs are ranked according to the agree percentage not according to the priority or importance level .

This mean that the paragraph that got a higher rank need urgent reform and intervention by the government in order to apply a successful public private partnership, in water and wastewater sector the public sector initially has challenges in establishing a sound legal and institutional framework, and creating a climate that is stable and conducive to investments with the aim of encouraging private sector investment in the water and wastewater sector.

From the opinion of the researcher, this result clarifies that the majority of water and wastewater sector Experts from different types of organizations agreed dramatically that applying a successful PPP scheme can lead to the delivery of high quality end services which can satisfy the growing needs of the Palestinian community, achieve the intended targets/goals of the government, as well as provide a favorable financial return for the private sector involved with the project. But with the difficulties and restrictions that imposed on the Palestinians, the government will face more obstacles and challenges to committing and securing a long term arrangement for private sector participation in

infrastructure or for inducing private sector to undertake capital investment in implementing and managing the large water and wastewater facilities. The experts totally agreed on that a successful PPP shall be designed with careful attention to the context or the enabling environment within which the partnership will be implemented in terms of legal and regulatory framework, Institutional framework, Technical Issues, Risk Management, Investment framework, Socioeconomic frameworks., Consultation with Stakeholders, Financing Requirements and Managing the interface between public and Private sector.

The results show how the strength of these aspects affecting the creating of a conductive environment enabling a successful public private partnership in Palestinian water and waste water sector. These results are consistent with **WEF & Boston Consulting Group (2013)** that confirm that for a PPP program to proceed smoothly, it needs a favorable environment in addition to adequate project specific preparation. The public sector has broad challenges to deal with as establishing a sound legal and institutional framework, and building the necessary capacity among civil servants. As for the private sector, if it is to deliver PPPs efficiently it needs the backing of policies that will improve its access to finance and foster a competitive and capable industry. And as for civil society at large, the challenges are: helping ensure that the PPP program progresses in a transparent and corruption-free way, and getting stakeholders to accept the program.

Hypothesis #10:

There are significant differences at significance level $\alpha \leq 0.05$ in the responses of the research sample due to the following personnel information (Type of your organization, Field of Specialist, Qualification and Years of Experience)

Table (5.16) shows that the p-value (Sig.) is greater than the level of significance $\alpha \leq 0.05$ for each personnel information, then there is insignificant difference in respondents' answers toward Applying a successful Public Private Partnership in Palestinian Water and Wastewater sector /Opportunities and constraints. We conclude that the personnel information have no effect on Applying a successful Public Private Partnership in Palestinian Water and Wastewater sector /Opportunities and constraints.

Table (5.16): Analysis of Variance for Personnel Information

No	Personnel Information	Test Name	Test Value	P-value(Sig.)
1.	Type of your organization	Analysis of Variance	1.168	0.323
2.	Field of Specialist	Analysis of Variance	0.753	0.585
3.	Qualification	Analysis of Variance	0.355	0.786
4.	Years of Experience	Analysis of Variance	0.510	0.602

From the researcher opinion all experts who are working in the field of water and wastewater regardless their type of organization, field of specialist, qualification and years of experience, recognize of the current situation of the Palestinian water and wastewater sector and the urgent need to apply a new management techniques to improve the water and wastewater services for the Palestinian community by encouraging applying public private partnerships in water and wastewater projects which PPP has already played a significant role in water and wastewater services delivery in various developed and developing countries. Given the vast services needs and constrained public financing, PPPs are bound to play a still greater part in the future and represent a promising way forward for many water and wastewater projects.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction
6.2 Major findings
6.3 Conclusion
6.4 Recommendation
6.5 Suggested future studies

6.1 Introduction

This chapter summarized the major findings of the research are analyzed and presented , conclusion and recommendations that were derived from combined results of literature review, methodology and the lesson learned from the presented case studies. Finally the future research ideas are stated.

6.2 Major Findings

After data analysis and presenting the literature review and the case studies, the major findings can be Summarized in the followings:

6.2.1 Major Findings: Assessment of PPP Importance, success factors and the potential constraints.

- The attractive factors leading Palestinian government for adopting PPP

– The attractive factors of PPP have been discussed by many researchers and which is summarized in Chapter 2. From literature it is found that PPP is a win-win solution and a number of benefits to the general public and government are recognized: relief of financial burden; better services to the public; encouragement of growth; better focus on social issues; better allocation of risk; Increased investment in public infrastructure; technology transfer; Enhanced public management.

– Chapter 6 presented the results found from empirical questionnaire survey. Most attractive factor was ranked by the respondents included: Protection of water resources from high overexploitation; Demand for water and wastewater services is growing due to the rapid population growth; Sustainable development of Water and wastewater sector in Palestine.; Improved quality and efficiency of service provision.

– From case studies presented in Chapter 4 , it was found that advantages such as the private sector's added high quality of service, efficiency, skills, innovation, expertise, and risk sharing can also be achieved.

- The factors that contribute in the success of PPP projects.

– From in-depth international literature review, a list of critical success factors was represented in Chapter 2. Most of the researcher identified as most common critical success factor is included: an appropriately Designed legal framework; a strong central structure to promote and guide PPP project implementation; Measurable output performance and transparency; allocation of risk appropriately; strong and good private consortium.

– Output of survey conducted based on empirical questionnaire survey is presented in Chapter 6. Eleventh success factors for adopting PPP were rated by the respondents and the top five success factors are identified these success factors included: Stable macroeconomic and political conditions.; Favorable legal and regulatory framework;

Competitive and transparency procurement process; Commitment and responsibility of public and private sectors; Technical and financial capability.

– In Chapter 4, 3 case studies are presented and lesson learned on critical success factor are listed:

1) The Gaza Management Contract case is one of the first private sector initiatives in the Middle East water sector, used an innovative contracting out strategy to overcome the limitations posed by weak local regulatory capacity
2) As Samra wastewater treatment plant in Jordan is a PPP experience can be considered as a model one in the region that can be replicated as a novel experience in the country and in the sector, it can be considered successful overall.
3) The Israel experience in seawater desalination success factors are: Well defined legislative and regulatory environment, Political support and commitment, appropriate risk allocation, Clear value for money, Financial viability, Good governance are identified as prominent success factor for PPP project.

- Obstacles that may constrain the PPP development in water and wastewater sector.

- From literature review, a summary of obstacles that may constrain the PPP development is presented. findings are presented in Chapter 2 the obstacles are identified are: lack of political commitment; lack of public governance; inadequate legal framework; lack of transparency and conflicts aims.
- Top four obstacles identified from the same empirical questionnaire survey presented in Chapter 6 top obstacles are distinguished from the analysis of the perceptions of the respondent are included: Lack of well-established legal and regulatory framework; Political and social obstacles; Lack of local or international financing. PPP projects are be delayed due to political debates and complex negotiation processes.
- Chapter 4 presented lesson learned from 3 case studies, it is concluded that obstacles in the case of Gaza management contract include volatile political situation, fragmented institutional setup, lacking of information and data, VAT problems, low level of experts, procurement problems, continuous closures of borders, lack of adequate legal and regulatory framework. In addition, lack of government commitment to a long-term project. In the case of As Samra wastewater treatment plant, the obstacles were during the operation phase.

6.2.2 Major Findings: Assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.

- **Legal and Regulatory framework**

Considering indicators such as: “Legal aspects for the private investment is defined in the new water Law, the existing policy framework and Palestinian Water Authority strategy

support open market access and investment in water and wastewater sector". Participation in PPP is not clearly defined country readiness is reflected as not good and not adequate in terms of legal and regulatory framework. Necessary steps are to be taken urgently as develop a specific effective and sustainable PPP legislation, policies, guidelines and regulation for water and wastewater sector with considering the different type of PPP models.

- **Institutional Framework**

"The current water sector institutional framework enables success and development of PPP Projects" This Indicator was assessed by respondent as moderate good this indicates that this area need more consideration when implementing the PPP projects in water and wastewater sector, the steps that should be taken including clear the responsibilities of each institution, enhance the capacity for all institutions in the framework and capacity of private sector, establish of specialized unit with sufficient experience for facilitating managing the relations with the relevant institutions. The success of PPP projects depends on a strong public sector which has the ability to identify, develop, negotiate, procure and manage projects through transparent process.

- **Technical Issues**

The indicators of "The government's experience and capacity in managing similar PPP projects is the major factor of successful PPP Process, Pre-analysis of technical and operational risks in PPP projects lead to effective implementation in all phases of the project, Prepare required technologies, technical specification, Operation and maintenance techniques, and Quality control mechanism of the proposed PPP project contributes in a PPP success and development and Develop of technical performance standards and indicators leads to a successful PPP management and monitoring" were assessed by the respondents with high agree percentage which indicate that the government should take these factors in consideration when applying PPP projects in water and wastewater sector in terms of technical issues.

- **Risk Management**

The indicators of "Successful PPPs require an effective risk management and better allocation to the best party that can manage them at least cost, Higher risk projects decreases investment levels in PPP projects, A Preliminary analysis and assessment of all possible PPP risks facilitates the transferring and mitigation of risks" were assessed by respondents with high agree percentage that indicate that when applying a PPP projects in water and wastewater sector, all possible risks related to the project should be assessed, analyzed and transferred to the best party that can manage and mitigate them this will enhance a successful relationship with the private sector.

- **Investment framework**

Respondents assessed the indicator of "Current investment framework in Palestine enabling a successful PPP partnership", the indicator representing week area in terms of investment framework , the readiness in this aspect is not good and not suitable. Government should take actions when applying PPP in water and wastewater sector to enable a successful PPP projects including: Removing of constraints on investment submitting incentives to attract potential local and foreign investors., submitting project specific assistances and guarantees, define the required investments for water and wastewater sector and develop the investment strategies and plans for achieving improvement taking in consideration the growing demand for high quality service delivery.

- **Socioeconomic framework**

The indicators of "Civil society participation in planning of PPP projects contributes in PPP success and services development, Demand forecast for the water and wastewater services contributes in future PPP planning and investment encouragement ,Planning for PPP projects have to include the needs of the poor and marginalized with added social welfare purpose, Pre comparison of required revenues and the customer willingness to pay helps in good planning and development of PPP projects" were assessed by respondents with high score of acceptance and should be taken in to consideration when applying PPP in water and wastewater sector . The empirical evidence indicates the readiness is not good in terms of socioeconomic framework and government should take urgent actions to improve water and wastewater services to the customer with high quality service delivery and reasonable price.

- **Consultation with Stakeholders**

The respondents regarding the consultation with stakeholders assessed three indicators of "the early Involvement of all stakeholders in the PPP process at every stage, developing of an effective ways of interacting with stakeholders, and involving them in decision making; inadequate consultation or communication with stakeholders increases. These indicators were highly agree percentage by respondents and this reflect how taking in consideration these indicators will increase the opportunities for a successful PPP projects in water and wastewater sector.

- **Financing Requirement**

The indicators of "Reliable and sustainable financing structure, Donors Contribution and supporting PPP projects Financial support mechanism by the government (commitment to recover costs, financing available for subsidies or allowing tariffs to increase) and Developing a financing plan for PPP in water and sanitation sector, were assessed by respondents with high agree percentage that should the government take in consideration when applying the PPP projects in water and wastewater sector.

- **Managing the interface between public and private sectors**

Regarding the interface between public and private sectors, many steps can be taken by the government for high quality relationship when applying the PPP projects in water and wastewater sector as assessed with highly agree percentage by the respondents to enable a successful partnership including : Establishment of PPP Unit supported by a range of specialists and technical advisors, Monitoring and assessment of the Interface management, understanding, open communication, information sharing, and recognition of mutual objectives.

6.3 Conclusion

The study achieved the main objectives that were set in the beginning, which were:

- Study different models of PPP in water sector with strength and weaknesses of each, the benefits for public and private sector.
- Assess the existing conditions that are enabling and dis-enabling the applying of PPP arrangement in water and wastewater sector in Palestine.
- To identify key factors for influencing successful Public-Private Partnerships in infrastructure projects and the a constraints.
- Study the main types of risks and how to allocate them to the party who can best assume them in the most cost effective manner.
- Present the features of a good relationship management of PPP infrastructure projects;
- To get recommendations that could help the concerned bodies in applying PPP in water and wastewater sector.

The mentioned objectives of this study were achieved by presenting of the main problems that face water and wastewater sector in Palestine, and clarifying the concepts of PPP, types of its models advantages and disadvantages, the main success factors and obstacles and the features of environment enabling a successful relationship in Palestinian water and wastewater sector, representing of three successful PPP case studies fro Middle East (Gaza, Jordan and Israel). In addition, the study presented in the literature review details of a successful PPP in water and wastewater sector. The questionnaire also was designed to cover the importance of PPP for Palestinians, the readiness of water and wastewater sector for applying PPP projects and the features for environment enabling a successful PPP projects in Palestinian water and wastewater sector .

6.4 Recommendations

Public private partnership is a way to procure public projects in order to achieve additional value for money in terms of efficiency and higher quality of services. Interest in delivering projects through PPPs is increasing as the advantages they deliver seem to overcome the issues currently outstanding: inefficient provision of public services, wasteful use of public funds, delivering projects late and over the budget expected, etc. Nevertheless, PPPs are very complex and expensive. In order to construct a PPP, large preparation and bidding costs arise and, as a result, only very specific and complex projects are granted the option to be considered for PPPs.

According to the results mentioned above, the following recommendations should be considered by the Government when applying the PPP in Palestine for enabling a successful environment to improve water and wastewater service delivery for community :

- PWA with cooperation with other relative institutions to develop a specific effective and sustainable PPP bylaw, Clear policies, guidelines and regulation for water and wastewater sector with considering the different type of PPP models and with extensively cover all the facets of partnership arrangements and it must be consistent with other laws and regulations
- There is a need for government departments ,institutions to build and sustain capacity, in order to facilitate deal flow for PPP projects with private sector. The success of PPP projects depends on a strong public sector which has the ability to identify, develop, negotiate, procure and manage projects through transparent process.
- There is a need to establish a PPP unit supported by a range of specialists and technical advisors for facilitating managing the relations with the relevant institutions and managing the interface with the private sector. The PPP Unit will also support ministries and other public bodies to ensure that their PPP project carefully appraised The PPP Unit will ensure effective stakeholder engagement, market interest and momentum of the process.
- Pre-analysis of technical and operational risks should be conducted in preparation phase of PPP projects, Preparing required technologies, technical specification, operation and maintenance techniques, and quality control mechanism of the proposed PPP project and develop of technical performance standards and indicators leads to a successful PPP management and monitoring.
- The level of investment in PPP projects depends on the public sector's marketing strategy, involvement and incentives for the private sector. A clear marketing strategy should be formulated and implemented by all PPP agencies; constraints should be removed, there must be a real incentives to attract potential local and foreign investors, government should submit specific assistance, guarantees and develop the investment strategies and plans for water and wastewater sector for achieving improvement taking in consideration the growing demand for high quality service.
- Ineffective risk distribution can lead to huge financial losses and renegotiation of PPP contracts. Government should ensure fair and appropriate risk allocation**.**
- Civil society should be involved in planning of PPP projects, Government should forecasts the demand for the water and wastewater services for future PPP planning and investment encouragement ,Plans for PPP projects should be developed including the needs of the poor

and marginalized with adding social welfare purposes, pre comparison of required revenues and the customer willingness to pay.

- Involve all stakeholders in the PPP process at every stage , developing of an effective ways of interacting with stakeholders, and involving them in decision making.
- A reliable and sustainable financing structure for PPP should be guaranteed, Government should encourages donors Contribution, Use financial support mechanism and developing a financing plan for PPP in water and wastewater sector.
- Develop a strategic framework for relationship management of PPP projects. The proposed framework is intended to provide a foundation to adopt relationship management in PPP projects, and to enable both public and private sectors to manage these important PPP relationships proactively
- There is a need for sustained PPP awareness, training and community education for the public, as a fundamental tool to the mainstreaming and success of the PPP sector
- There is a Need to start applying the PPP arraignment in Palestinian water and wastewater sector stating with short term contracts as management contracts, service contracts, BOT

6.5 Suggested Future Studies:

This research can be expanded to cover other areas in PPP in Palestinian water and wastewater sector.

Accordingly the following future studies are suggested:

- A comprehensive study is to be performed by conducting case studies about the legal, policy and regulatory framework and how to develop the framework and compare with international experience for lesson learned.
- A research study can be conducted on two similar projects that are procured by traditional methods and by PPP. The difference in successes and outcome could be recorded and compared to determine which method will have the best outcomes.
- A comprehensive study on the effect of civil society on the successful or failure of PPP orojects.
- A comprehensive study for each PPP model in details and how can be implemented in Palestinian water and wastewater sector and compare with international experience.
- A study research can be conducted to the PPP experience in other sectors in Palestine and study the reasons for success or failure for lesson learned.

References:

- Abouali (1998), G. 'Natural Resources Under Occupation: The Status of Palestinian Water Under International Law' (1998) 10 Pace International Law Review, 422.
- Abu Shams, I & Awamleh, M (2007), 'Public Private Partnership through, build operate transfer in Jordan wastewater sector' Eighth International Water Technology Conference, IWTC8 2004, Alexandria, Egypt
- ACWUA (2014) , 'Water utilities in the Arab region lessons learned and guiding principles', Swedish International Development Cooperation Agency (SIDA), 2014
- AECOM Consult, Inc., 'Synthesis of Public-Private Partnership Projects for Roads, Bridgesand Tunnels from Around the World' 1985-2004 (Washington D.C.: United States Department of Transportation, 2005).
- Akerele, D and Gidado, K (2003) The risks and constraints in the implementation of PFI/PPP In Nigeria. In: Greenwood, D J (Ed.), 19th Annual ARCOM Conference, 3-5 September 2003, University of Brighton. Association of Researchers in Construction Management, Vol. 1, 379-91
- Akintoye, A., Beck, M., Hardcastle, C., Chinyio, E. and Asenova, D. (2000) Management of Risks within the PFI Project Environment. Association of Researchers in Construction Management Sixteenth Annual Conference. Glasgow Caledonian University, 261-270.
- Al Jamal, K (2003) 'The Palestinian Water Authority Water and Wastewater Services Improvement Project' Presented during the Water Week at the World Bank Washington, March 2003
- Al-Haq (2013) , 'Water For One People Only Discriminatory Access and 'Water-Apartheid' in the OPT'Al-Haq 2013, Ramallah-Palestine.
- Amnesty International 2008) , 'Troubled waters –Palestinians denied fair access to water Israel-Occupied Palestinian Territories' (2008) Amnesty International Publications 2009.
- Anderson, A., Janssens, J. (2011), 'Emerging PPP trends in the water & sanitation sector' (2011), Building Partnerships for Development in Water and Sanitation www.bpdws.org
- Arino, A., De La Torre, J. and Ring, P. S. (2001) Relational quality: management trust in corporate alliances, California Management Review.
- ASEAN Public – Private Partnership Guidelines, Available at ww.eria.org/ASEAN%20PPP%20Guidelines_Full%20Report.pdf
- Asian Development Bank (2008) , 'Public-Private Partnership Handbook'(2008) Asian Development Bank, Mandaluyong City Manila, Philippines.
- Aziz, A. M. A. (2007). "Successful Delivery of Public-Private Partnerships for Infrastructure Development." Journal of Performance of Constructed Facilities, 21(6),918-931.
- Babatunde,S., Opawole, A., Akinsiku, O (2012),' Critical success factors in public-private partnership (PPP) on infrastructure delivery in Nigeria', Journal of Facilities Management, Vol. 10 Iss: 3 pp.212 – 225
- Banda, I., (2004), 'Private sector participation in the water and sanitation industry in Zambia', The University of Zambia, Zambia
- Barker (2004) , 'Turnkey contracts: getting it right from the start Ellis Baker, partner and head of Construction and engineering practice group
- Béréziat, E., (2009), 'Partnerships involving small-scale providers for the provision of

sanitation services: Case studies in Dakar and Dar-Es-Salaam' UNESCO-IH Institute for water education , Netherlands

- Berry, A. , Crow, R., (2003) 'The Greenfield IPP Database (GRIPP):Based on the World Bank's Private Participation in Infrastructure (PPI)Database' The Program on Energy and Sustainable Development (PESD) at Stanford University
- Bing L, Akintoye A, Edwards P.J, Hardcastle C, (2005) "The Allocation of risk in PPP/PFI construction projects in the UK", International Journal of Project Management 23 25-35.
- Camdessus, Michel. 2003. Financing Water for All. Report of the World Panel on Financing Water Infrastructure,James Winpenny, ed. World Water Council, Marseilles,France.
- Canadian Council for PPPs, (2001), 'Benefits of Water Service Public-Private Partnerships' Presented to the Walkerton Inquiry, The Canadian Council for Public Private Partnerships Available at www.pppcouncil.ca/pdf/wateringq.pdf
- Canadian Council for Public-Private Partnerships (2004), "About PPP,", available at <www.pppcouncil.ca/aboutPPP_definition.asp>.
- Chan, A., Lam, P., Chan, D. and Cheung, E. (2008), 'Application of Public Private Partnership (PPP) in Hong Kong Special Administrative Region – the Critics' Perspectives", submitted in First International Conference on Construction In Developing Countries (ICCIDC–I), "Advancing and Integrating Construction Education, Research & Practice'. August 4-5, 2008, Karachi,, Pakistan
- Charles, N. (2006), 'Public Private Partnership as Modes of Procuring Public Infrastructure and Service Delivery in Developing Countries', Lessons From UGANDA, International Public Procurement Conference Proceedings, 21-23 September 2006
- Chege. L , Rwelamila, P (2001) , "Private Financing of Construction Projects and Procurement Systems: An Integrated Approach," in Proceedings of CIB World Building Congress, Wellington, New Zealand.
- City of London, (2008), 'Developing India's Infrastructure through Public Private Partnerships', City of London/Research Republic LLP
- Crimsey, D. and lewis, M. (2007), 'Public Private Partnerships and Public Procurement', Agenda, Volume 14, Number 2, 2007, pages 171-188
- Dantas, A. Ribeiro, K. (2006) Assessing Spatial-Temporal Impacts of a Transport Infrastructure Policy in Brazil. Transportation Research Board.
- Dayem SA and Odeh N, ,"Water governance" in El-Ashry, Mohamed; Saab, Najib; and Zeiytoon,Bashar (eds.), Arab Environment: Water– Sustainable Management of Scarce Resources,p. 171-188.
- Di Lodocico, A.M. (1998), "Privatization and investment under weak regulatory commitment", PhD dissertation, University of California, Berkeley, CA.
- Dixon, T., Pottinger, G., and Jordan, A. (2005). 'Lessons from the private finance initiatives in the UK: benefits, problems and critical success factors'. Journal of Property Investment and Finance. 23(5), 412-423
- DOFSA Department of Finance (2000), 'Guidelines for Public-Private Partnership', South Africa.
- Dwivedi, G.(2010), 'Public-Private Partnerships in Water Sector: Partnerships or Privatization?', Manthan Adhyayan Kendra, available at www.manthan-india.org
- EAP³N Project, (2009),' Public-Private Partnership in Infrastructure Development Case Studies from Asia and Europe', Faculty of Civil Engineering, Germany

Edwards, P., Shaoul, J., Stafford, A., & Arblaster, L. (2004). Evaluating, the operations of PPP in roads and hospitals. ACCA research report. London: Certified Accountants Educational Trust.

- El-Gohary, N. M., Osman, H., and El-Diraby, T. E. (2006). "Stakeholder management for public private partnerships." Intl. J. of Proj. Mgmt., 24, 595
- EPEC, (2011),' The Guide to Guidance How to Prepare, Procure and Deliver PPP Projects', European PPP Expertise Centre, available online at www.eib.org/epec/g2g/index.htm.
- ESCWA, (2013),'Public-Private Partnerships for infrastructure development in Arab region', United Nations New York, 2013
- European Commission, (2003),'guidelines of successful public private partnership', European Commission, available at http://europa.eu.int/comm/regional_policy/sources/docgener/guides/PPPguide.htm
- European Investment Bank(a) ,(2011),' PPP Legal & Financial Frameworks in the Mediterranean Partner Countries- Volume I-A Regional Approach ', European Investment Bank
- European Investment Bank(b) ,(2011),' PPP Legal & Financial Frameworks in the Mediterranean Partner Countries- Volume II- Country Analysis', European Investment Bank
- European PPP Expertise Centre, (2014), 'Market Update Review of the European PPP Market in 2014', European PPP Expertise Centre.
- Farquharson. E, de Mästle, C. , Yescombe, E. & Encinas, J. (2011), 'How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets', The International Bank for Reconstruction and Development, Washington available at www.worldbank.org
- FIDIC (2001) , Project Financing Sustainable Solutions – Adding Value through Innovation Re-assessing the Priorities. Geneva, Switzerland: Federation Internationale des Ingenieurs Conseils.'
- Forrer, John, Kee, James, and Zhang, Zhibin, "Greenway Case Study," Draft 2002, The George Washington University, Washington, DC.
- Fox, C. and Butler, G. (2004). 'Partnerships: where next?' Community Safety Journal, 3, 3, 36–44.
- Fussell , H. and Beresford, C (2009), 'Public-Private Partnerships :Understanding the Challenge', The Centre for Civic Governance is an initiative.
- George, D. and Mallery P. (2006). SPSS for Windows Step by Step. A Simple Guide and Reference, page 231. Allyn and Bacon, Boston, MA, USA.
- Gisele,S. , Nicola, T.; Yesim, Y. (1998). 'Private Participation in the Water and Sewerage Sector : Recent Trends'. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/11540 License: CC BY 3.0 Unported."
- H.M. Treasury (1998). 'Partnerships for Prosperity: the Private Finance Initiative, London, 1998.
- Habibija (2012), 'An Analysis of Public Private Partnership in Posnia and Herzegovina', school of economic and Business, University of Saravejo and Faculty of Economics, University of Ljublgana.
- Heinke, G. and Wei, J. (2000) ."Innovative approaches to financing of initiatives such as sustainable infrastructure and building, planning, design, construction and operation," Consultancy for Asia Pacific Economic Cooperation (APEC), Final Rep., HKUST, Hong Kong.

- Henry C. Thode, Jr. (2002). Testing for Normality. New York: Marcel Dekker, Inc. p. 479. ISBN 0-8247-9613-6.
- Herpen (2002). 'Public private Partnerships, The advantages and disadvantages examined'Association of European transport, Dutch Ministry of transport, Public works and water management
- Ibid, P.3
- IISD (2012), 'Harnessing the Power of Public-Private Partnerships: The role of hybrid financing strategies in sustainable development'. Published by the International Institute for Sustainable Development, Canada.
- IPDF, (2007). 'Project Preparation/Feasibility Guidelines for PPP Projects'. Infrastructure Development Project Facility, Pakistan
- Jamali, D. (2004), 'Success and failure mechanisms of public private partnerships (PPPs) in developing countries Insights from the Lebanese context' .The International Journal of Public Sector Management Vol. 17 No. 5, 2004 pp. 414-430q Emerald Group Publishing Limited
- Jefferies, M. C., Rowlinson, S., and Cheung, Y. K. F. (2006). "Relationship management in the Australian construction industry: a catalyst for cultural change." In Dulaimi, M (Ed.) Joint International Conference on Construction Culture, Innovation and Management on Sustainable Development through Culture and Innovation, 26-29 November 2006, Dubai Knowledge Village, Dubai, UAE.
- Johnstone, N. , Wood, L. & Hearne, R. (1999), 'The Regulation of Private Sector Participation in Urban Water Supply and Sanitation: Realising Social and Environmental Objectives in Developing Countries' ENVIRONMENTAL ECONOMICS PROGRAMME.
- Julian, T., Quamrul, A., and Bernadine Van, G. (2006) Managing trust and relationships in PPPs: some Australian experiences. International Review of Administrative Sciences, 72(1) 85.
- Kelly, E. S., Haskins, S., & Reiter, P. D. "Implementing a DBO. Project". Journal-American Water Works Association, 34-46,. 1998
- Klijn, E. H., & Teisman, G. R. (2003). Institutional and strategic barriers to public-private partnership: an analysis of Dutch cases. Public Money & Management, 7, 7-146.
- Kumaraswamy, M. and Zhang, Z. "Governmental Role in BOT-led Infrastructure Development," International Journal of Project Management, 19/4 (May 2001): 195-205.
- Kwak, Y., Chih, Y., Ibbs, C. (2009), 'Towards a Comprehensive Understanding of Public Private Partnerships for Infrastructure Development'. CALIFORNIA MANAGEMENT REVIEW VOL. 51, NO. 2 WINTER CMR.BERKELEY.EDU
- Linder, S.H. (1999), "Coming to terms with the public private partnership", American Behavioral Scientist, Vol.43 No.1, pp.35-51.
- Local Government Association of South Australia, (2002). 'Generic Types of Contractual Arrangements with the Private Sector' Local Government Association of South Australia Review of Septic Tank Effluent Disposal Schemes (STEDS) Program in South Australia
- Mahalingam, A. and Kapur, V., (2009) "Institutional Capacity and Governance for PPP projects in India," Lead 2009 Conference, South Lake Tahoe, CA, USA.
- Ministry of Finance (MOF-Israel), (2011). 'PPP projects in Israel', Mr. Abraham Tenne Head of Desalination Division and chairman of the WDA
- Ministry of Finance (MOF-Israel), (2013). 'Essence of Financial Statements - Present the

features of a good relationship management of PPP projects.Government of the State of ISRAEL. Available at www.ag.mof.gov.il/NR/rdonlyres/...CAE1.../FinancialReport2013.pdf

- Mistarihi1,A. , Al Refai , M. , Al Qaid, B. & Qeed,M . 'Competency Requirements for Managing Public Private Partnerships: The Case of Infrastructure Projects in Jordan'. International Journal of Business and Management. Vol. 7, No. 12; June 2012
- Mohammed, A. (2007), 'Prospects of Private Sector Participation for Sustainable Water and Sanitation Services in the Gaza Strip - Present the features of a good relationship management of PPP projects. Islamic University, Palestine
- Moyo, P. (2013). 'An assessment of private sector participation as a viable alternative for improved urban water provision in Zimbabwe: The Case of Harare Municipality' , Stellenbosch University
- MYSZOGRAJ, S. and QTEISHAT, O. (2011). 'Operate of As-Samra Wastewater Treatment Plant in Jordan and Suitability for Water Reuse' Inżynieria i Ochrona Środowiska. t. 14, nr 1, s. 29-40
- Ng, ST; Wong, YMW; Wong, JMW (2010). 'A structural equation model of feasibility evaluation and project success for public private partnerships in Hong Kong'. IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, VOL. 57, NO. 2, MAY 2010. Hong Kong
- NYAGWACHI (2008), 'South African Public Private Partnership (PPP) Projects' The built environment and information technology.
- OCED, (2013). 'Public-Private Partnerships in the Middle East and North Africa'. ISMED Handbook
- OECD (2011), Water Governance in OECD Countries: a Multi-level Approach, OECD Publishing, Paris
- OECD.(2003). 'Public-Private Partnerships in the Urban Water Sector.' Policy Brief.
- PALTRADE (2010). 'Investment in Palestine: The Reality'. Palestine Trade Center. www.paltrade.org
- Pessoa, A. (2006). 'Public private partnership in developing countries: prospects and drawbacks',
- Pongsiri, N. (2002), "Regulation and Public Private Partnerships ", The International Journal of Public Sector Management, Vol.15 No.6, pp.487-95.
- Prasad N. (2006), 'Current issues in Private sector participation (PSP) in water Service'. A revised version of this paper is published in the Development Policy Review, November. 2006, vol. 24, no. 6, pp. 669-692
- PWA (1997). 'Water and Wastewater Services Improvement Project-Progress Report'. PWA.
- PWA (2012). 'Palestinian Water Authority Annual Status Report On water resources, WATER SUPPLY, AND wastewater in the occupied state of Palestine. PWA, 2012.
- PWA (2014 a). 'National Water Strategy for Palestine Toward Building a Palestinian State from Water Perspective'. Palestinian Water Authority. http://www.pwa.ps/
- PWA (2014b). 'PWA Achievements Report'. PWA
- PWA law (2014), 'Decree No. ( ) for the year 2014 Relating to the Water Law' http://www.pwa.ps/. Presidential Office Date : 14/06/2014
- Qiao, L. Wang, S. Tiong, R. and Chan, T., "Framework for critical success factors of BOT projects in China," J. Proj. Finance, vol. 7,no. 1, pp. 53–61, 2001.

- Rees, J. (1998). Regulation and Private Participation in the Water and Sanitation Sector. TAC Background Papers, No.1. Sweden: Global Water Partnership/Swedish International Development Cooperation Agency
- Regan M. (2005). Public Private Partnerships: Do they Add Value to Infrastructure Procurement? Melbourne University.
- Rockart, J. (1982) "The Changing Role of the Information Systems Executive: A Critical SuccessFactors Perspective," Sloan Management Review, 24/1 :3-13.
- Rondinelli, D. 'PARTNERING FOR DEVELOPMENT: GOVERNMENT-PRIVATE SECTOR COOPERATION IN SERVICE PROVISION' available at unpan1.un.org/intradoc/groups/public/.../unpan006231.p
- Sader, Frank (2000), Attracting Foreign Direct Investment in to Infrastructure: Why is it so difficult? Foreign Investment Advisory Services (FIAS), Washington.
- Saghir, J., Sherwood, E & Macoun, A. (2009), 'Management Contracts in Water and Sanitation-Gaza's Experience'. The World Bank Group * Finance, Private Sector, and Infrastructure Network
- Samra Project Company (SPC) , (2014). 'Company Brochure'
- Savas (2005). 'PRIVATIZATION AND PUBLIC-PRIVATE PARTNERSHIPS1'Adapted from E. S. Savas, Privatization in the City: Successes, Failures, Lessons (Washington, DC: CQ Press, 2005).
- Scobbie, I. (1997), 'Natural Resources and Belligerent Occupation: Mutation through Permanent Sovereignty' in S Bowen (ed.) Human Rights, Self-Determination and Political Change in the Occupied Palestinian Territories (Martinus Nijhoff Publishers, The Hague, 221.
- Smyth, H., and Edkins, A. (2007). "Relationship management in the management of PFI/PPP projects in the UK." International Journal of Project Management 25(3), 232.
- SPC, (2014), 'Samra Plant Consortium (SPC) Report'. 2014, Published by Samra Plant Consortium
- STEDS (2002). 'Generic Types of Contractual Arrangements with the Private Sector'. Local Government Association of South Australia Review of Septic Tank Effluent Disposal Schemes (STEDS) Program in South Australia 20020449RA3.doc
- UNDP/PPPUE & YALE (1999). 'Joint Venture Public-Private Partnerships for Urban Environmental Services' UNDP/PPPUE/Yale University. Available at www.ucl.ac.uk/dpu.../UNDP_PPPUE_Joint%20Venture_2.pdf
- UNESCAP (2007). 'Public-Private Partnership in infrastructure Development', UNESCAP and the Ministry of Planning and Budget, Republic of Korea. Available at www.planejamento.gov.br/.../unescap_PPP_in_Infrastructure_Developm
- UNESCAP. 2011. A Guidebook on Public-Private Partnership in Infrastructure. United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Bangkok: UNESCAP.
- UNESCO-IHE, ' On line training materials ' available at https://www.unesco-ihe.org/
- United Nations (2008). 'Guidebook on promoting good governance in Public Private Partnership'. United Nations Economic Commission for Europe.
- Water Authority of Israel (IWA). (2010). 'Collaboration between private and public sector for financing desalination in Israel' Water Authority State of Israel
- Water Authority of Israel (IWA). (2014). 'Water Authority Report, 2014"

- Wikipedia, the free encyclopedia, http://en.wikipedia.org
- World Bank (2003), World Bank Group Private Sector Development Strategy Implementation Progress Report, Washington, D.C., 2003.
- World Bank (2006), 'Approaches to Private Participation in Water Services ,A TOOLKIT' . 2006 The International Bank for Reconstruction and Development / The World Bank, Washington, DC 20433
- World Bank (2007).' WATER SECTOR BOARD DISCUSSION PAPER SERIES' . 2007 The International Bank for Reconstruction and Development.
- World Bank Group(WBG), (2012). 'World Bank Group Support to Public-Private Partnerships: Lessons from Experience in Client Countries', IEG Independent Evaluation Group, World Bank/IFC/MIGA
- World Bank. 2001. "Water Resources Sector Strategy: Concept Note for Discussion with CODE." <http://lnweb18.worldbank.org/ESSD/ardext.nsf/18ByDocName/WaterConceptNoteSeptember2001/$FILE/WaterConceptNoteCODEVersion090701.pdf>
- World Economic Forum (WEF) &Boston Consulting Group (2013), 'Strategic Infrastructure Steps to Prepare and Accelerate Public-Private Partnerships'. World Economic Forum
- Woss, H. (2008), 'The ICC Model Turnkey Contract for Major Projects', Wöss & Partners, S.C., Mexico City Construction Law International Volume 3 No 2 June 2008
- Yescombe, E. (2007). 'Public–Private Partnerships Principles of Policy and Finance'. 2007, Yescombe Consulting Ltd. Published by Elsevier Ltd.
- Zhang, X.Q. (2005). Critical Success factors for Public Private Partnerships in Infrastructure Development. Journal of Construction Engineering and Management, 13(1), 3-14.
- Zheng, J., Roehrich, J. K., and Lewis, M. A. (2008). "The dynamics of contractual and relational governance: Evidence from long-term public-private procurement arrangements." Journal of Purchasing and Supply Management, 14, 43-54.
- ZOU, W (2012). 'Relationship Management in Public Private Partnership Infrastructure Projects'. Central South University, Hunan, China
- Zouggari, M. (2003), "Public private partnerships: major hindrances to the private sectors participation in the financing and management of public infrastructure", Water Resources Development, Vol. 19 No.2, pp.123-9.

Appendixes

Appendix (1): Questionnaire

Appendix (2): Names of questionnaire referees

Appendix (1):

Questionnaire

Islamic University of Gaza

Deanery of Graduate Studies

Faculty of Commerce

Department of Business Administratio

Questionnaire No.

Date:

Dear Colleagues,

This questionnaire is a tool of collecting data in order to assess the concerned bodies, key players and experts in Palestinian water and wastewater sector, where this assessment will be used in the thesis about: **"Applying a successful Public Private Partnership in Palestinian Water and Wastewater sector /Opportunities and constraints"** to be submitted in a partial fulfillment of the requirement for MBA degree.

The purpose of this study is to gain in depth understanding of opportunities that enabling applying a successful public private partnership (PPP) projects in Palestinian water/wastewater sector and the constraints especially in implementing and managing large-scale water and wastewater facilities.

The questionnaire is designed in three parts; the first part is about the personnel information, the second part covers the assessment of PPP importance, factors of success and the potential constraints, the third part covers the assessment of the readiness of Palestinian water and wastewater sector for applying PPP and the features of

the environment that enabling a successful PPP.

Therefore, your participation in answering the questionnaire is highly appreciated to achieve the objectives of this study. Please return completed (hard copy or electronic) questionnaire to Sawsan El Masry by fax or e-mail at the following addresses.

Researcher: Sawsan El Masry

Email : s_elmasry@hotmail.com , selmasri@pwa-gpmu.org Fax: 0097282826630

Thank You for your cooperation,,,,,

Questionnaire

Part A : Personnel Information

Type of your organization:

◯ Ministry ◯ Regulator ◯ Service Provider

◯ Private Sector ◯ Civil Society & NGO ◯ Donor ◯ Others: ----------

Field of Specialist:

◯ Sanitation ◯ Water & Environment ◯ Finance & Commerce

◯ Social Activities ◯ Power & Energy ◯ Others:----------

Qualification: ◯ Bachelor ◯ Master degree ◯ PHD degree ◯ Others: ----------

Years of Experience	

Part B. For Assessment of PPP Importance, success factors and the potential constraints.

1.Please rate the attractive factors leading Palestinian government for adopting PPP	**Not Important**	**Slightly Important**	**Moderately Important**	**Important**	**Very Important**
a. Sustainable development of Water and wastewater sector in Palestine					
b. Protection of water resources from high overexploitation.					
c. Restrictions imposed by Israel on the Palestinians access to water supplies.					
d. Demand for water and wastewater services is growing due to the rapid population growth.					
e. Shortage of government funding and avoid public investment restrictions.					
f. Improved quality and efficiency of service provision.					
g. Enhance the role of water sector in the economic development.					
h. Lack of capacity and expertise in water and wastewater sector.					
i. Increase investment in water and wastewater sector					
j. Lack of governmental enforcement in revenues collection.					
k. Customer satisfaction on the provided services with high quality and affordable prices.					

2.Please rate the factors that contribute to the success of PPP projects	**Not Important**	**Slightly Important**	**Moderately Important**	**Important**	**Very Important**
a. Stable macroeconomic and political conditions.					
b. Favorable legal and regulatory framework.					
c. Technical and financial capability.					
d. Appropriate project risks management.					
e. Commitment and responsibility of public and private sectors.					
f. Good governance and good interface management between public and private sectors.					
g. Competitive and transparency procurement process.					
h. Government involvement by providing guarantees and incentives.					
i. Reasonable profit for private sector.					
j. Affordability and customer willingness to pay.					
k. Reassessment of water tariff system to achieve the balance between customer satisfaction and profit.					
3. Please rate the following Obstacles that may constrain the PPP development in water and wastewater sector.	**Not Important**	**Slightly Important**	**Moderately Important**	**Important**	**Very Important**
a. Inadequate risks management.					
b. Political and social obstacles					
c. Lack of well-established legal and regulatory framework					
d. Lack of local or international financing					
e. Both public and private sector lack of appropriate knowledge and skills					
f. Higher water and wastewater services cost paid by the customer.					
g. Restrictions on local and international investment.					
h. PPP projects are be delayed due to political debates and complex negotiation processes					
i. Lack of transparency in procurement and contracting processes.					
j. Lack of government monitoring on private sector profits					

Part C: For assessment, the readiness of Palestinian water and wastewater sector for applying PPP and the features of the environment that enabling a successful PPP.					
1- Legal and regulatory framework	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. Effective and sustainable legal and regulatory framework enhances the development and successful of PPPs.					
b. Legal aspects for the private investment is defined in the new water law.					
c. The existing policy framework and Palestinian Water Authority strategy support open market access and investment in water and wastewater sector.					
d. Develop a specific PPP legislation, guidelines and regulation in Palestine provide adequate opportunity to assess the most effective type of PPP for a given water or wastewater project.					
e. Policies relative to PPPs should be consistent with other government policies, legislations etc.					
2- Institutional framework	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. The current water sector institutional framework enables success and development of PPP Projects.					
c. Clear responsibilities of each institution enhance applying PPP projects.					
d. Institutions in the framework have the capacity to manage PPP contracts.					
e. Transfer more responsibilities to the private sector contributes in development of water and wastewater sector .					
f. Establish of specialized unit with sufficient experience supports the success of managing the partnership projects and facilitates managing the relations with the relevant institutions.					
3- Technical Issues	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. The government's experience and capacity in managing similar PPP projects is the major factor of successful PPP Process.					
b. Pre-analysis of technical and operational risks in PPP projects lead to effective implementation in all phases of the project.					
c. Prepare required technologies, technical specification, Operation and maintenance techniques, and Quality control mechanism of the proposed PPP project contributes in a PPP success and development.					

d. Develop of technical performance standards and indicators leads to a successful PPP management and monitoring.					
4 - Risk Management	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. Successful PPPs require an effective risk management and better allocation to the best party that can manage them at least cost.					
b. Higher risk projects decreases investment levels in PPP projects.					
c. A Preliminary analysis and assessment of all possible PPP risks facilitates the transferring and mitigation of risks.					
5- Investment framework.	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. Current investment framework in Palestine enabling a successful PPP partnership.					
b. Removal of constraints on investment and incentives submitted by Government will assist in attracting potential local and foreign investors.					
c. Project-specific assistances and guarantees, submitted by the government lead to a successful PPP with the private sector.					
d. Define the required investments for water and wastewater sector help the government to develop its strategies and plans for achieving improvement.					
e. High demand for high quality service delivery increases demand for private sector investment in PPP projects.					
6 - Socioeconomic frameworks	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. Civil society participation in planning of PPP projects contributes in PPP success and services development.					
b. Demand forecast for the water and wastewater services contributes in future PPP planning and investment encouragement.					
c. Planning for PPP projects have to include the needs of the poor and marginalized with added social welfare purpose.					
d. Pre comparison of required revenues and the customer willingness to pay helps in good planning and development of PPP projects.					

7 - Consultation with Stakeholders	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. The early involvement of all stakeholders in the PPP process at every stage helps development an enabling environment for successful PPP water project.					
b. Developing of an effective ways of interacting with stakeholders, and involving them in decision making contribute in PPP success and development.					
c. Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation.					
8 - Financing Requirements	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. Reliable and sustainable financing structure guarantees successful and sustainable PPP water and sanitation services.					
b. Donors Contribution and supporting PPP projects encourages private sector to invest in water and wastewater sector.					
d. Financial support mechanism by the government (commitment to recover costs , financing available for subsidies or allowing tariffs to increase) should be clear and confirmed to the private sector.					
e. Developing a financing plan for PPP in water and sanitation sector assists in planning and implementing PPP projects according needs.					
9 - Managing the interface between public and Private sector	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
a. The quality of the relationship between public and the private partner contributes in the success of PPP projects.					
b. Establishment of PPP Unit supported by a range of specialists and technical advisors is important for managing and monitoring PPP projects.					
c. Monitoring and assessment of the interface management will contribute in improving the performance and increase chances of future PPP in water sector.					
d. The key factors to a successful relationship are mutual understanding, open communication, information sharing, and recognition of mutual objectives.					

Appendix (2):

Names of questionnaire referees

Name	
Dr. yousif Ashour	Islamic University in Gaza
Dr. Fahid Rabah	Islamic University in Gaza
Dr. Sami Abu Rous	Islamic University in Gaza
Dr. Khalid Qahman	Environmental Quality Authority
Dr. Thaer Abu Shibak	Palestinian Ministry of Agriculture
Dr. Fares Abu Moamer	Islamic University of Gaza
Dr. Mazen Abu Eltaief	Islamic University of Gaza
Dr. Sami Hamdan	Palestinian Water Authority
Eng.Mahmoud Shaban	Palestinian Water Authority
Dr. Adnan Ayesh	Al-Azhar University in Gaza