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**Developing a Sustainable Procurement Action
Plan for Public Sector in Ajman**
تطوير خطة عمل لتنفيذ مشاريع القطاع العام في إمارة عجمان
بطريقة مستدامة

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Dissertation submitted in partial fulfillment of
MSc Project Management

Faculty of Business

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May - 2011

DISSERTATION RELEASE FORM

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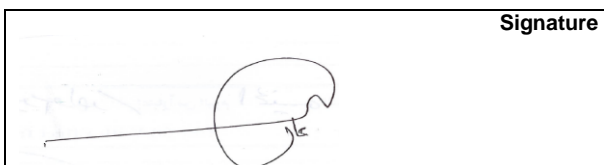


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Executive Summary

Sustainability, sustainable development (SD) and sustainable procurement (SP) are important topics on many countries' agenda worldwide. The concept of sustainability is formulated around meeting present generation needs without compromising future generation needs. Depletion of natural resources, affecting biodiversity and increasing poverty are common challenges faced by many communities all around the world. Therefore, it is really important to address sustainability aspects whole community's activities. Public sector has significant spending rates for procuring different projects and services, which makes it among key players in market. If it used its purchasing power toward affecting market's attitude, then for sure that will be a key success factor for implementing SP aspects. If such concept can be implemented in public sector, then it can be adopted smoothly in other sectors as well. The aim of this dissertation was to develop an action plan to implement SP at Ajman's public sector. Drivers, barriers for SP, diffusion mechanisms and the impact from the Political, Environmental, Social, Technological, Economical and legislative aspects were investigated to serve dissertation's aim. Since SP concept is not common in Ajman, survey method could not be used as responds level and quality will neither be accurate nor representative. Case studies, interviews and focused group discussion were used instead. Among the list of different drivers and barriers affecting SP implementation at public sector, the following factors were playing potential role in Ajman's public sector, which are government support, financial aspect, right understanding of SP, necessary legislations and necessary awareness campaigns. There were many sustainable initiatives implemented at the case studies' organizations. However, these initiatives were not incorporated in an integrated sustainable scheme. This dissertation is

showing that there is a potential readiness in Ajman to accept SP implementation. Implementation needs to be supported by necessary legislations, necessary top management commitment, intensive training programs for employees to build required level of skills, intensive awareness campaigns for all community members and intensive educational programs for students at all academic level.

Keywords

Sustainability, Sustainable Procurement, Sustainable Development, Drivers, Barriers, Joint Procurement

ملخص تنفيذي

الاستدامة وتنفيذ المشاريع بطريقة مستدامة هي من المواضيع المهمة المطروحة على أجندة العديد من الدول في العالم. إن مفهوم الاستدامة يتمحور حول استيفاء متطلبات واحتياجات الجيل الحالي بدون التضحية باحتياجات الأجيال المستقبلية. استنزاف الموارد الطبيعية و التأثير على التنوع البيولوجي و إزدياد الفقر هي تحديات شائعة في مختلف دول العالم. لذلك فإنه من المهم أن يتم الأخذ بعناصر الاستدامة و تطبيقها بجميع النشاطات المجتمعية. يعتبر القطاع العام من أبرز القطاعات التي تسجل معدل عالي في الانفاق عند تنفيذ العديد من المشاريع و الخدمات ، الأمر الذي يجعل هذا القطاع من أكبر القطاعات الفعالة بالتأثير على السوق ، وإذا تم استخدام مثل هذه القوة الشرائية بالتأثير على أسلوب السوق و النمط المتبع فإنه بلا شك سيكون من أكثر عوامل النجاح فعالية في تطبيق الاستدامة. وخاصة إذا تم تطبيق مثل هذا المفهوم في القطاع العام فيكون من السهل تطبيقه بالقطاعات الأخرى. إن هدف هذا البحث هو تطوير خطة عمل لتنفيذ المشاريع في القطاع العام بإمارة عجمان بطريقة مستدامة. ولتحقيق هذا الهدف سيتم بحث ودراسة العوامل الدافعة و المعوقات التي تؤثر على تنفيذ الاستدامة وتطبيقها كما سيتم التعرف على الآليات المختلفة لدفع مثل هذا النمط ، وكما سيتم في الوقت نفسه دراسة التأثيرات السياسية و البيئية و الاجتماعية و التقنية و الاقتصادية و التشريعية بما يتناسب مع أهداف هذا البحث. لم يكن بالإمكان تطبيق أسلوب الاستبيان كطريقة بحث في تحصيل المعلومات المطلوبة وذلك لأن مفهوم تنفيذ المشاريع بشكل مستدام ليس شائعاً في إمارة عجمان وبالتالي فإن الردود التي سيتم تحصيلها لن تكون دقيقة أو ممثلة للوضع الحقيقي. لهذا السبب تم إختيار المقابلات الشخصية للمعنيين و المناقشات الجماعية المركزة و دراسة الحالات القائمة كطرق بحث لخدمة أغراض هذا البحث. من بين قائمة العوامل الدافعة و المعوقات التي تمت دراستها فإن العوامل التالية كانت أبرزها تأثيراً على القطاع العام في إمارة عجمان وهي كالتالي: الدعم الحكومي و الجانب المالي و الفهم الصحيح لمفهوم الاستدامة ووجود التشريعات اللازمة و الوعي الكافي لتطبيق هذا المفهوم. على الرغم من وجود العديد من المبادرات المستدامة التي تم تنفيذها في المؤسسات قيد الدراسة ، إلا أنه لم يتم وضعها بمنهج متكامل. إن هذه الدراسة توضح بأن هناك استعداد كبير وقوي في إمارة عجمان لتقبل تطبيق الاستدامة في تنفيذ المشاريع. ولتشجيع هذا التطبيق فإنه يجب توفير التشريعات اللازمة و دعم القيادة العليا وبرامج التدريب المكثفة لتأهيل الموظفين وتزويدهم بالمهارات اللازمة ، كما أنه من الضروري نشر الوعي اللازم من خلال إطلاق حملات توعية مكثفة لجميع أفراد المجتمع و تطبيق البرامج التربوية المكثفة لجميع الطلبة في مختلف المستويات الأكاديمية.

Chapter 1

Introduction

1.1 Background

Sustainable Procurement is considered to be one of the important trends worldwide. Actually, it is considered a national and international agenda item. In a very simple definition, Sustainable Procurement means that procuring the goods and services that are sustainable and have the least negative impact on the environment with the maximum positive impact on the society. “The sustainability can be incorporated into the whole procurement process: defining the need, evaluating options, design and specifying, supplier selection, tender evaluation, post contract management and supplier development” (Hall & Purchase, 2006; Nakou et al, 2006; Morrissey, 2006; Walker and Brammer, 2009). So it is about thinking of three main issues: Economics, Environment and Society, which are forming the principles of sustainable development.

The Emirate of Ajman had experienced in the past three years strong movement and development in the different projects that made Ajman a point of attraction to many investors. This development had resulted in massive construction projects of towers, buildings, roads, sewerage systems, water and electrical facilities. The majority of these projects were procured by the public sector departments or under their supervision. Therefore, the public sector in Ajman has a massive influence and power on Ajman’s Market. However, it was not clear if these projects and developments were procured in a sustainable approach or not. Moreover, the current public procurement system in Ajman is the traditional procurement system and sustainability aspect is not yet expanded on large scale projects. Although, there were

some initiatives by few public departments, which were incorporating sustainability aspects implemented in Ajman in the last two years, but the majority of the public departments are still adopting the traditional procurement system. The public sector can bring the environmental and social benefits and hence the whole community can benefit from the positive impact. Therefore, this research will attempt to develop an appropriate and practical action plan that can be introduced to the public sector as a step toward diffusing sustainability aspects in the current procurement system to transform it to sustainable procurement system.

1.2 Aim and Objectives

The main purpose and aim of this dissertation is to develop an effective and practical action plan to introduce sustainable procurement system to the public sector in the Emirate of Ajman. To achieve this aim, a framework that will integrate the sustainable practices and principles in the procurement process will be drawn. This will not be only to achieve the value for the money, which is considered to be the basic concept of any procurement policy, but to implement that in an environmental friendly approach.

Therefore, the objectives of the dissertation are:

- To identify potential barriers and drivers to adopt and implement a sustainable procurement approach in Ajman's public sector.
- To identify the mechanisms for the introduction and adoption of sustainable procurement approach in Ajman's public sector.
- To assess and evaluate the impact of such approach from the political, environmental, social, Technological, economical and legislative (PESTEL) aspects.

1.3 Dissertation Structure

In this dissertation, three objectives were defined to pave the way forward toward achieving the main aim of the dissertation. The research was narrowed on three main areas: potential drivers and barriers affecting the implementation of sustainable procurement, diffusion mechanisms for smooth implementation of sustainable procurement and finally the PESTEL aspects' impact on sustainable procurement implementation. These three objectives will be the steering factors to investigate the main aim, which is developing an effective and practical action plan to introduce sustainable procurement system to Ajman's public sector. The literature was reviewed comprehensively in Chapter 2. The first three sections were around the sustainability and sustainable development concept and how this concept is related to sustainable procurement. The sustainable procurement definitions by different authors and organizations were explored. Section 4 and 5 discussed the different drivers and barriers that could encourage or discourage sustainable procurement implementation in the public sectors. Section 6 presented some of the diffusion mechanisms and action plans implemented in different countries to introduce the sustainable procurement in public sector. In Section 7, the impact of PESTEL aspects on the sustainable procurement approach was studied. The Role of Governments and their intentions toward sustainable procurement implementation in the public sector was discussed in Section 8. Section 9 summarized the literature review and presented what could be considered as an appropriate framework to implement sustainable procurement in public sector. Chapter 3 of this dissertation highlighted the methodology used to support the objectives and investigate the actual situation in Ajman. The current procurement practices implemented within Ajman's public sector were compared and evaluated according to the developed framework in Section 9 of

Chapter 2. The research method used was based on real case studies, interviews and focused group discussions with the concerned departments. The survey method could not be used in this research due to the fact that the concept of sustainable procurement is still new in Ajman and not very common. Two public organizations were selected to focus the research due to the difficulties that were faced in obtaining data from all the public departments in Ajman. The findings, data and outcomes were presented and analyzed in Chapter 4. The whole dissertation with the necessary recommendations was summarized in Chapter 5.

This dissertation is an attempt to develop proper and practical action plan to implement sustainable procurement in Ajman's public sector. It could be considered an initiative to draw a road map for further researches in how to implement and adopt sustainable procurement in Ajman's public sector.

Chapter 2

Literature Review

2.1 Sustainability

The major definition for sustainability as defined by Hall & Purchase (2006) and Nakou et al (2006) is “Meeting present generation’s needs without compromising future generation needs”. The environmental and social impact that the industries and life style had on the earth made the sustainability a top agenda item (Myers, 2005). Peralta et al (2008) indicates that if any organization would like to operate towards sustainability, it should start “with the belief that we are part of a larger system – a business ecology – and extends the willingness to examine the larger socio economic system and how we impact it at the individual, community, and organizational levels, and eventually at the planetary level.” Moving toward Sustainability could be a holistic vision for many organizations according to Garner and Keoleian (1995) if the organization succeeded in identifying the environmental problem and accept the way to solve this problem through sustainable practices and sustainable development.

2.2 Sustainable Development

The principle of sustainable development is formulated around three main areas, which are Society, Environment and Economy (Hall & Purchase, 2006). In the first area, the sustainable development can ensure that the society is strong enough to maintain healthy living atmosphere for all the community members. Within the second area, sustainable development can ensure that living within acceptable environmental limits is maintained effectively. In the third area, sustainable development can ensure that good governance is promoted (Walker & Brammer, 2009).

2.3 Sustainable Procurement Definition

There is a strong relationship between procurement and sustainability. This relation is identified by implementing the process of realizing the concept of procuring an item and its implication on the life cycle through the specification of performance (Pollington, 1999). Therefore, sustainable procurement is actually serving and enforcing the sustainable development in any community.

In this context any government will have two main roles to play with significant impact on the industry ability to achieve more sustainable solutions through sustainable procurement. First of all it placed the government to participate as a purchaser in the market and secondly as regulator of the market. The role of the government as a regulator is obvious and critical. Equally the different government departments with their significant purchasing powers can create the drivers in the market to enforce a more sustainable procurement.

Queensland Government's State Procurement Policy (2010) defined the Sustainable Procurement (SP) to be the process of procuring different goods, services and projects with considering:

- Minimizing the environmental impact of these projects or services
- Firming strategies to control the demand
- Avoiding unnecessary consumption
- Gaining the required value for the money spent
- Encouraging the suppliers to be more responsible for social practices and in compliance with the legislative

The Australian and New Zealand Government Framework for Sustainable Procurement had adopted the same definition for sustainable procurement. The United Kingdom Government and the Marrakech Task Force on Sustainable Public

Procurement defines sustainable procurement as: "A process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment" (Morrissey, 2006).

Jones (2007) had conducted a research to identify the barriers and drivers for the sustainable procurement process. His research included some of the major companies in United Kingdom, which included different fields like Food, drinks, aerospace, pharmaceutical and retail. Within his research, Jones defined five pillars for sustainable procurement. These pillars consist of sharing the knowledge with the suppliers, focusing on working with nongovernmental organizations and charities, establishing corporate social responsibility goals, making flexible changes to the contracts to accommodate the new goals and finally improving the personnel development and processes.

2.4 Sustainable Procurement Drivers

Jones (2007) in his research identified the drivers for the sustainable procurement within the private sector to be divided in two categories: external drivers and internal drivers. The external drivers were the investors' expectations, the performance of the industries, the requirement of the standards, the influences of the nongovernmental organizations, the desire to reduce the risk reputational, the increase of the customer requirements, the competency of the suppliers to adopt new process and the enthusiasm to change the whole industry practice.

The internal drivers were including the ability of the buyers to understand the concept of the sustainable procurement, the willingness of the procurement team to work with the other related teams, the organizational factors, the goals of the

company or the organization, the good procurement practice, the organization size and the strategy of the organization. In addition to these drivers, the leadership of the organization is playing an important role to adopt such a practice.

In contrast, the drivers of the sustainable procurement within the public sector are formulated around four main factors or drivers (Walker & Brammer, 2009). The first factor is familiarity with policies. This driver or factor is focusing on the informational aspects to implement sustainable procurement. In other words, for a public organization to adopt sustainable procurement, it is very important for that organization to understand the definition of sustainable procurement and what are the government policies, if any, in this regard. So in my opinion, understanding the procurement process is very important to adopt the sustainability practices. Also, I believe that being familiar with the government policy and legislation will help to know how sustainability can be implemented smoothly. The second driver is the cost of implementing sustainable procurement. There is an emphasis on the role of the financial aspects related to implementing sustainable procurement. The financial aspects are perceived in a way that the sustainable procurement is always more expensive than the normal procurement. However, taken in consideration the tight budget constraints that are faced by most public sector organizations, the perceptions regarding the cost effectiveness of the sustainable procurement are expected to play an important role in encouraging the sustainable procurement. The third driver is pressure or incentive of the organizations. This is about the climate or the atmosphere within the organization that may encourage or discourage the sustainable procurement implementation. Usually it is expected within the public organizations that a resistant to change culture will be the dominant climate. Therefore, it will be a challenging task to implement the process of sustainable procurement. So I believe that team and

individual commitment, awareness campaign, training, top management support and proper incentives are playing important role in affecting and driving the sustainable procurement implementation and adaptation process. The fourth driver is availability of suppliers. It will be a challenging process to identify sustainable sources of supplying goods and services for the government sector. I think that the ability to work with the suppliers and understanding their needs to meet the organizations' demand is very important to lead this driver in a positive direction.

On the contrary, the drivers for sustainable procurement practices can be totally different than the above mentioned drivers. This was indicated very clearly in a study that was done by Vanegas and Pearce (2000). In this study, the drivers for sustainable procurement practices were centralized around the depletion of resources and the impact of the project on the human health. I am convinced that such drivers will be effective drivers if directed in the right direction. In different parts of the world, there were many resources used over the years, which are non renewable resources. Therefore, if such driver was adopted to influence the community then I think that it can form a winning ticket. Another aspect is the impact on human life, which I believe strongly that there should be intensive awareness within the public sector that procuring new projects should not affect the human life in a negative way. On contrary, the focus should be always toward a positive impact on the human life and the whole community.

Reviewing different articles that were written by different authors, I found that many other different studies done by different authors like: Augenbroe and Pearce (1999), Augenbroe et al (1998) and Nakou et al (2006) highlighted different drivers for sustainable procurement. These authors considered the measures and strategies for energy conservation and resources saving as one of the important drivers. Another

driver was the regulation of the urban planning and policies and the land use. The initiatives of minimizing waste production were considered another driver by them. The quality of the indoor and outdoor atmosphere, recognizing commercial buildings as productivity assets, emerging of new technologies that adopt environmental friendly aspects, cost optimization, value for money, adoption of incentives and new types of projects and partnerships were considered very important drivers.

At the same time, we should pay attention that introducing new formats of contracts and procurement arrangement, assessing the project proposal based on the whole life cost cycle, moving toward integrated supply chain management and introducing key performance indicators that will be client oriented are some key drivers for the implementation of sustainable procurement policy (Winch & Courtney, 2001).

As we can note from the above opinions and views for the different authors over the literature that there is a common factor linking all the drivers to each other. This common link is the necessary regulation and policies in place to support and enact the implementation of sustainable procurement. Also it is very important that sustainable procurement is understood in the right way. The other drivers mentioned by the different authors are important as well and they are driven by the nature of the project itself. **Table 1** summarizes all of the above mentioned drivers.

Table 1: The drivers for Sustainable Procurement

No.	Driver	Author
1	Investors' expectations	Jones (2007)
2	Industries' performance	
3	Standards' requirement	
4	Nongovernmental organizations' influence	
5	The desire to reduce risk reputational	
6	The increase of customer requirements	
7	Suppliers' Competency to adopt new process	
8	Enthusiasm to change whole industry practice	
9	Ability of the buyers to understand the concept of the sustainable procurement	
10	Procurement team's willingness to work with other related teams	
11	Organizational factors	
12	Company's Goals	
13	Good procurement practice	
14	Organization's size	
15	Organization's strategy	
16	Organization's leadership	
17	Familiarity with policies	
18	Cost of implementing sustainable procurement	
19	Organization's incentives	
20	Availability of suppliers	

21	Team & individual commitment	Practical experience
22	Awareness campaign	
23	Training	
24	Top management support	
25	Ability to work with suppliers	
26	Understanding the needs to meet demand	
27	Resources' depletion	Vanegas & Pearce, 2000
28	Project's impact on the human health	
29	Measures and strategies for energy conservation and resources saving	Augenbroe and Pearce (1999) Augenbroe et al (1998) Nakou et al (2006)
30	Urban planning, policies and land use regulation	
31	Minimizing waste production initiatives	
32	Indoor and outdoor atmosphere quality	
33	Recognizing commercial buildings as productivity assets	
34	Emerging of new technologies that adapt environmental friendly aspects	
35	Cost optimization & value for money	
36	Adoption of incentives	
37	New types of projects and partnerships	
38	New formats of contracts & procurement arrangement & supply chain management	
39	Assessing project proposal based on the whole life cost cycle and key performance indicators	

2.5 Sustainable Procurement Barriers

The development of sustainable procurement is usually hampered by a mixture of non technical constraints (Beck and Martinot, 2004). In European Union (EU) Countries, Flamos et al (2008) identified the constraints and barriers to sustainable procurement to be around the experience, the access to information, the non flexibility, the environmental concerns, the cost, the market and the necessary legislation. When considering the first barrier, which is the Experience, then it is about the little experience of the potential end users and the limited dissemination of the EU experience in the field of the sustainable energy technologies for example to other countries. I believe that the lack or little experience is a common barrier in other countries as well and not only within EU countries. This is can be noticed in the Middle East, Asian and Gulf Council Countries (GCC). The access to data and information was considered another barrier, as it is not easy to access the relevant information of a similar project success or failure. I think that this is a common problem of knowledge and experience transfer between the regions and sometime within the same country. Also, I believe that sometimes the matter is not only about how easy or difficult to access the information but it is about the availability of the information and where it is available. That is considered a real challenge and constrain that I faced personally when I worked on some projects in Ajman and Sharjah. Non flexibility is another barrier, especially that replacing existing practices with new practices would require some adjustments and additional provisions. The other barrier identified in the EU countries was the cost. Usually the costs of the environmental concerns for the conventional practices are not included at the planning stage. In my opinion, this is very common in the water and wastewater fields, as the effect of the long term operations of such utilities is not considered although that for

every project there is an Environment Impact Assessment (EIA). However such concerns are not addressed. The market is forming another constraint and challenge. The pressure of the interested groups which are in the market since long time and such new practices are threatening their business is influencing the market acceptance for new practices. Such barrier is noticed in the market of United Arab Emirates (UAE) in the field of procuring wastewater treatment infrastructure. For example, the conventional methods of treating wastewater were depending on the electro mechanical equipments in the treatment process. Many technology providers in the wastewater treatment field were active in developing new equipments and process schemes that depend mainly on electrical and mechanical aspects. These aspects will of course involve capital cost in addition to operational cost (OPEX). When some new active sustainable companies took the initiatives of introducing new methods of treating the wastewater in a sustainable and environmental friendly way that will maintain a green practice and enhance the bio diversity aspect, these suppliers were faced with high resistance from the key players in the market that were maintaining the business since long time. Also, the Municipalities and beneficial organizations from these infrastructures were reluctant to adopt such new sustainable methods. The reasons for being reluctant were the cost of implementing such new methods, the performance of these new processes, the area required and sometimes the refusal is just because it is a new method and the organizations are looking for more existing working references that are proven. In many countries, the absence of official policies and strategies for promoting sustainable procurement practices is playing an important role in hampering the implementation of sustainable procurement. In addition to the above, the administrative bureaucracy and the lacking of institutional and legal framework are considered some of the common barriers and constraints in many

countries. This is including as well obtaining the necessary permits which require long time. Also the involvement of too many authorities in implementing a practice that will serve the sustainable procurement objectives is imposing different conditions, which would delay the investment and increase the uncertainty of the investment.

Flamos et al (2008) had identified all of the above barriers that were faced within the EU countries when there were attempts to implement different sustainable procurement practices such as renewable energy. In my opinion, UAE in general and Ajman in particular are facing exactly the same barriers and constraints. Flamos et al (2008) in their research of “EU and Asian Countries policies and programs for the diffusion of sustainable energy technologies” had identified the barriers that are existing within Asian countries to be all of the above barriers in addition to some additional constraints. The additional constraints are mainly related to the financing aspects. It is very difficult to attract the international financing institutions to finance new sustainable projects in Asian countries. Also the low competitiveness of sustainable procurement practices especially in the utilities field as there is a common national subsidies in such countries, which resulted in the low prices for the utilities. Another constraint is the local banks within these countries. These banks have limited involvement and there is a lack of special financing facilities. The difficulties in obtaining the competent human resources, capital and technological resources are representing other constraints faced within the Asian countries. Pollington (1999) defined the largest factor leading to cause a strong constraint in implementing the sustainable procurement is the cultural misalignment between the industry practice and the client needs. Ajman is facing many of these constraints especially the financial aspects. As will be seen in Chapter 4 later, the common barriers within

Ajman were most of what had been faced in other countries. Most of the barriers are centralized around lack of budget, lack of resources, wrong perceptions of cost, lack of pressure to act, lack of necessary legislations, lack of top management commitment, lack of awareness, and conflicting of priorities (Walker & Brammer, 2009).

Jones (2007) had highlighted some of the barriers that could hinder the sustainable procurement process such as the gaps of the knowledge, the limitations of the resources, the communication failure within and outside the organization, the insufficient supplier commitment, the complicated language and culture related issues, the lack of clear road map for adopting sustainable procurement, the competitive pressure from the external business atmosphere and the wide scope of the audits.

Snell (2008) highlighted in his report “Government slow to improve on sustainable buying practice” that in some United Kingdom (UK) public departments there is still a lack of awareness for the sustainable procurement definition. It was evidence that some of the staff within the public sector in UK is still considering sustainable procurement as simply purchasing from the recommended list for the products and the services. In addition to that, necessary skills and supplier engagement with high level of coordination are also some faced barriers.

The transformation to sustainable organizations is faced with different barriers. A review of the market in Spain and other countries by different authors had identified these barriers to be proliferation of legislation, stakeholders’ pressure and the concern of the market for the natural environment (Angell and Klassen, 1999), (Brio and Junquera, 2001) and (Hibbit and Kamp-Roelands, 2002). These were considered to be barriers because when there are different and multiple legislation in

the same country, there will be an issue of compliance and commitment. Of course the pressure that the stakeholders will play against the sustainable procurement implementation will be a strong barrier. Also not to forget that what concerns the market had about the sustainable environment. This will form a barrier if it was a negative concern. **Table 2** summarizes the above mentioned barriers and obstacles.

Table 2: The barriers for sustainable procurement

No.	Barrier	Author
1	Experience	Flamos et al (2008)
2	Access to information	
3	Non flexibility	
4	Environmental concerns	
5	Cost	
6	Market	
7	Necessary legislation	
8	Attract the international financing institutions to finance new sustainable projects	
9	Non flexibility of local banks	
10	The difficulties in obtaining the competent human resources, capital and technological resources	
11	Administrative bureaucracy	Beck and Martinot, (2004)
12	The lacking of institutional and legal framework	
13	Cultural misalignment between the industry practice and the client needs	Pollington (1999)
14	Lack of budget	Walker & Brammer,

15	Lack of resources	(2009)
16	Wrong perceptions of cost	
17	Lack of necessary legislations	
18	Lack of top management commitment	
19	Lack of awareness	
20	Conflicting of priorities	

2.6 Other countries Action and Implementation plans

In the literature, many authors highlighted the different action plans that were formulated in different countries to facilitate the implementation of sustainable procurement in public sector. United Kingdom took the lead in this field as its target was to be a leader in the public sustainable procurement. The reason behind that was the huge investment of 150 billion UK Pound (Department of Environment, Food and Rural Affairs, 2007) that UK is investing on yearly basis for the public projects procurement. The office of Government Commerce (OGC, 2000) in UK published a document called “Achieving Sustainability in Construction Procurement Sustainability Action Plan” that can be used as a road map or action plan for the central government departments in UK (OGC, 2000). The document presented different themes that can be implemented to enhance the sustainable procurement practices. Some of those themes are water & energy conservation, respect to people and community, lean construction strategy, Re use versus new build mentality, bio diversity and waste production minimization concept (Hall & Purchase, 2006). The indicators for measuring the performance of this action plan were divided into national and local indicators. The national indicators include: communicating right key messages to the community, keeping stable economy, being recognize as a

sustainable community and conforming good management for the environment and the resources. The local indicators are: optimum uses of resources, social enterprises, stabilize and sustainable local economy, safe environment, healthy community with good education (Hall & Purchase, 2006).

European Union countries (EU) were active as well in the field of implementing sustainable procurement in different applications. The main point to develop sustainable practices and implement them in the market depends basically on the efficiency and the power of the implementation conditions in those markets (Flamos et al, 2008). Although the EU countries had faced the barriers mentioned in Section 2.5, however many mechanisms were used to implement the sustainable procurement practices. These mechanisms can be used as well in the growing and developing countries as a road map. Some of these mechanisms were:

- National Systems of Innovations: the integration between capacity building and knowledge transfer can enhance a positive and encouraging atmosphere to implement the sustainable procurement. The National system of Innovation can play the role of such enhancement and creation for the necessary atmosphere of innovation and creativity (Masinda, 2005) and (Flamos et al, 2008).
- Official Development Assistance (ODA): this mechanism is proposed strongly because it can be used to set up the frame work for the policy management and improving the capacity building within the countries that are just started with the sustainable procurement aspects. The ODA can be best utilized to facilitate the bridge financing for the sustainable projects. (Flamos et al, 2008).
- The Global Environment Facility (GEF): United Nations Framework Convention on Climate Change (UNFCCC), which is managed by the World

Bank and the United Nations Development Programs (UNDP) is adopting the GEF as its financial mechanism. The GEF is playing an important role as an institution of transferring the sustainable technology for Energy. GEF is targeting the investment in different financing and institutional models that can be used in demonstrating different technology transfer to different countries. (Flamos et al, 2008)

- Multilateral Development Banks (MDB): this type of banks can facilitate the lending arrangement for the sustainable projects implementations and hence overcome the financial barriers that some countries are facing in financing sustainable projects. (Flamos et al, 2008)
- Research and Development Policies would help in overcoming the technical barriers that could be faced when implementing the sustainable technologies or practices. Such policy can help in optimizing the high cost of the materials or the equipment and hence reduce the potential cost of investment. (Flamos et al, 2008)
- Intensive training programs, awareness campaigns and financial incentives can be used as powerful tools to enhance the implementation of the sustainable procurement practices. (Flamos et al, 2008) and (Pena et al,2010)

2.7 PESTEL aspects Impact on Sustainable Procurement

Pollington (1999) argues that in defining Sustainable procurement it's essential to distinguish between the mega considerations of cultural, environmental and social aspects and the micro considerations of initiating the construction projects. Nakou et al. (2006) explains that it is to design and construct a building that will lessen its impact on the environment by reducing the toxic materials usage and by reducing the consumption of non renewable resources and energy.

Nakou et al. (2006) moved on and argue that the sustainable construction is a profitable and competitive industry process that enhances the customer satisfaction and the life quality. It about understands the place, the people and the natural processes. At the same time it offers flexibility to accommodate the future changes. It respects the nature and the environment and maximizes the efficient use of resources (Nakou et al, 2006; GCCP, 2000). There is a practical and theoretical interest in obtaining profitability with a pollution reduction, which is serving the company's reputation in protecting the environment. The legislation and regulation are playing an important role in encouraging the companies to adopt strategies that will reduce the pollution rather than prevent it (Post and Altman, 1994). The role of the regulation is proved to be true in the case of small and medium size companies who are tending to be in compliance with the legislations (Pena et al, 2010).

According to Walker and Brammer (2009), there are many issues that sustainable procurement should consider such as: the manufacturers and suppliers' ethical behavior and social responsibility, the end of life option for the services or the products that would include recycling, reusing and disposal methods, resources requirement, design requirement, the distribution and production logistics and transport and durability of the product or the service. According to Pollington (1999), there are different issues impacting the process of the Sustainable Procurement such as the ethical and human rights, the higher environmental standards, understanding and absorbing the cultural values of the customers and the end users, the implications of the life cycle, the need for higher environmental standards, and the specifications of the required performance. David Jaggard as mentioned in Pollington's paper has identified the following issues to be considered on any future agenda related to the procurement practices (Pollington, 1999):

- All the industries should adopt high environmental standards
- The eco design principles should be highly encouraged
- To be engaged in wider implications of commercial activities

Transparency, accountability and achieving value for money are the principles of public sustainable procurement (Walker and Brammer, 2009).

Procurement on the basis of value for money is one of the important aspects related to the sustainable procurement. Meeting users' requirement and needs in an optimum combination of whole life cost and quality is defining the value for money aspect of the sustainable procurement. The approach of value for money can be achieved by including relevant factors in the contract specifications. These parameters are related to the sustainable development and the environment. Some of these factors are the health and safety and the specifications that reflect the environmental matters on the basis of the whole life costs (GCCP, 2000).

Nakou et al (2006) had investigated the Greece construction industry. The methodology used was Delphi technique based on a survey included 20 experts from different consulting and engineering firms . The study concluded that the strategies of energy and resources conservation and minimizing the waste productions were the most issues influenced the sustainable procurement in the Greece construction industry.

2.8 Government's & Management's behavioral intentions toward sustainable procurement

2.8.1 Government's Role

Any government is playing a vital role in driving the sustainability agenda by improving its performance and translating that improvement is a clear demand on its

suppliers. Initiating and developing sustainable practices and considering the environmental issues should be executed by the governments. I believe that this is important because as mentioned previously that power levied to the governments can enhance and accelerate the acceptance of new approaches in procurement by the society and markets. If the governments took such initiatives, then for sure these initiatives will help in defining the sustainability goals for the future (Barrett et al., 1999; Raynsford, 1999; Blaauw & Priemus, 2000; Haarman et al., 2000).

2.8.2 Different Examples for Governments' Role

In many countries, the sustainable procurement is considered on the top agenda of the government. In June 2000, the Government Construction Clients' Panel (GCCP) in UK had initiated a Sustainable Construction Action Group. That was part of achieving excellence initiative that was endorsed by the GCCP. The GCCP considers that it will be a challenge for any organization to achieve sustainability in procurement and especially the construction field. However, this challenge is accepted by clearly sets out how the government clients will take forward the agenda of sustainable development and utilize it in procuring the new works, maintenance and refurbishment. Of course this will achieve the objective of the sustainable procurement, which is delivering better value for the money for all the concerned parties (GCCP, 2000).

There were many goals identified by the GCCP in its way forward to achieve the excellence. Saving water and energy resources, producing less amount of wastes, procurement in line with value for money principle based on the whole life cost, respecting the biodiversity action plan that was developed in UK, respecting the people, less pollution, better environmental management and improved health and safety at the sites are some of those goals (GCCP, 2000).

The sustainability and environmental policy had become a strategic variable for different organizations. Some local examples from UAE were Abu Dhabi and Dubai Governments. Abu Dhabi Government was very active in adapting sustainable development and sustainable procurement as a top agenda item for the Executive council of Abu Dhabi. In Dubai, there were many legislations and regulations enacted to support and enforce implementation of sustainable procurement practices such as Green buildings regulation, re use of treated effluent water from wastewater treatment plants in the district cooling industry instead of the sweet water, the thermal insulation in the buildings, the enforcement of reducing water consumption through the restrictions on the design of the flushing tanks, tap and shower nozzles.

2.8.3 The Organizations' Perception of Sustainable Procurement

The sustainability, sustainable procurement and environmental policy had been considered by many governments and organizations from a strategic perspective due to the competitive advantages they can offer to these organizations and to the national economics (Pena et al, 2010). Hibbitt and Kamp-Roelands, (2002) had highlighted in their paper that the “Corporate reputation will replace product innovation and design, quality and service as the most important competitive differentiator over the next 50 years”. In my point of view, it will be a real and enormous conceptual challenge for the companies and the employees to tackle in order to be able of transforming today's organizations into sustainable companies. It is therefore very crucial for the managers to consider the environmental and sustainable issues due to the extreme important of such a phenomenon for all companies and organizations (Pena et al, 2010).

Anderson and Bateman (2000) explained that the reason many managers find it difficult to adopt the sustainability issues within their departments is that they

considered that is that many find it difficult to understand from the technical point of view, and hence difficult to quantify and evaluate. This is a very natural reaction as I think that many people tend to resist the change and hence such managers will find it difficult to change an established process and procedure to a different procedure.

Every manager has his/her own perception of the sustainability and environmental related issues according to his/her role in the organization, his/her background and his/her experience. Such perception is crucial to determine how the organization will react to the sustainability and sustainable procurement and how it will develop a strategy that will include these issues within it (Bowman and Davis 1989, Fineman and Clarke 1996).

It is useful to mention in this context a model that was adapted from Gelderman and his colleagues. The model is a conceptual in the form of presenting the factors that will influence the sustainable public procurement. These factors could be considered drivers or barriers. What I mean to say here is when the factor is a positive then it is a driver but when it is negative then it is a barrier. The seven factors identified in the model adopted from Gelderman et al (2006) were: the familiarity with policies, the perceived inefficiencies, the costs of policy, the organizational incentives, the organizational pressures, the supplier availability and the supplier resistance. So when the organizations and their staff are familiar with the policies then this is considered to be a driver that will influence the sustainable procurement in a positive way. However, when there is no familiarity with policies, then for sure this will be a barrier, which will impact negatively on the implementation of the sustainable procurement.

2.8.4 Alignment with Organizations' Strategy

In order to implement changes to the organization's strategy and align it with sustainability and environmental issues, two important factors should be taken in consideration: the first factor is consistency with norms and values of the managers who will implement and adopt these strategies (Bansal and Roth, 2000) and the second factor is alignment with organizational goals (Walker and Brammer, 2009). Therefore, the managers are playing important and critical role when they recognize the effect of their company's activities on the environment and the society and they try to minimize this impact by incorporating the sustainability and environmental concerns within the company's internal values and establish the standards of ethical behavior (Pena et al, 2010).

Within the strategy of implementing sustainable procurement, the managers on different managerial level (head of unit, section manager, and department director or organization chief officer) should respond to the needs of their stakeholders, their employees, their customers, their shareholders and their community (Fineman and Clarke, 1996).

2.8.5 Diffusion mechanism

The success launching of sustainable procurement depends on the efficiency of the implementation of such practices in the region or the market. It is started from entering the market, through the legislation to the end users of such practices (Flamos et al, 2008). There are many factors that could affect the diffusion mechanisms of sustainable procurement in a positive way. In addition to what were mentioned above, there is a good opportunity that can be offered to improve the organization's performance by respecting the environmental requirements.

There is a practical and theoretical interest in obtaining profitability with a pollution reduction, which is serving the company's reputation in protecting the environment.

The legislation and regulation are playing an important role in encouraging the companies to adopt strategies that will reduce the pollution rather than prevent it (Post and Altman, 1994). The role of the regulation is proved to be true in the case of small and medium size companies who are tending to be in compliance with the legislations (Pena et al, 2010).

Presently, there are many organizations that are changing their reactions with the sustainability issues. This reflects the attempts of those organizations to include and enforce the sustainability policy in their value chain (Anderson and Bateman, 2000).

When the previous literature in the field of the sustainable procurement and environmental policy is reviewed, the reader will find that the view had changed from the reactive attitude to these subject to be comply with a legislation or solving a problem to the proactive attitude (Hunt and Auster, 1990), which is considering the sustainability and adapting environmental policy an opportunity to performance improvement (Winsemius and Guntram, 1992). Nevertheless, it is necessary to keep in mind when an organization would adopt a proactive attitude, it must be sure that it has the capable human resources who will be able to understand and translate the sustainability, sustainable procurement principles and the environmental policy in a workable action plan that can be implemented successfully (Pena et al, 2010).

2.8.6 Key success factors

In my opinion, continues training and learning will be needed from the organization to its staff that will be transmitting the sustainability concerns to all

levels of the organization's members. Also, it is very important to ensure clear definition of the organizational structure and of the environmental and sustainable procurement responsibilities. I believe that it will be useful to have a unit within the organization who will be following the implementation of the policy through a clear Sustainability management system. And of course on the top of all of these, the top management commitment and encouragement and enacting the necessary legislations and laws are considered the top key success factors.

In addition to the above, it is important that the concept of sustainable procurement is adopted on the high Government level and the necessary legislations are issued in this regard. For example, the UK government had stated its goal to be amongst the leaders in Europe on sustainable procurement by 2009 as per the Department of Environment, Food and Rural Affairs statement in 2005 (Walker & Brammer, 2009). Therefore, the focus was on the public procurement and how the public organizations will spend the money of the taxpayers' on the goods and services. The public procurement should be guided by transparency, accountability and achieving the value for the money for both the citizens and the tax payers. Walker and Brammer (2009) had identified that the UK government is very active in this field because the public procurement expenditure as published by the Department of Environment, Food and Rural Affairs in 2007 is approximately 150 billion UK Pound. Therefore, since the Government is the biggest customer within the country, then it can use its power to influence the behavior of the private organizations. To be more specific, it is been noted that the public procurement can be used as a driver to deliver the broader government objectives in implementing an innovative attitude in the supply markets and to support the environmental and social objectives by utilizing the public money (McCrudden, 2004).

Bossink (2002) highlighted in his research about the Netherland experience for innovation in sustainable construction that the Government has to set up the environmental plans policy, the laws and regulations, the financial incentives and the demonstration projects for smooth implementation of sustainable procurement.

The size of the organization is considered one of the factors that are affecting the sustainable procurement implementation. In many literatures it was shown that the smaller organizations are less advanced in addressing the sustainability related issues. In other words, it is easier to implement a sustainability management policy in standardized and well structured large organizations. This could be due to the fact that the managers of the small and medium size companies are reluctant to adopt sustainable actions for fear of undermining their company's flexibility (Pena et al, 2010).

2.9 General Framework

2.9.1 Literature Review Summary

Many topics and subjects were discussed and elaborated in the Literature Review Chapter. This elaboration was necessary to support and fulfill the requirements for the defined aim and objectives of this dissertation. The sustainability, sustainable development and sustainable procurement were explained thoroughly. The interaction between these three subjects and the different definitions of sustainable procurement were clarified and highlighted. Different drivers and barriers that could impact the implementation of sustainable procurement positively or negatively were discussed. Several diffusion mechanisms and action plans of the countries that started with sustainable procurement were highlighted. In addition to that, the PESTEL impact on the sustainable procurement was studied. Finally the government intention toward sustainability and sustainable procurement was evaluated and assessed with different examples for several governments implemented sustainable procurement practices.

Therefore, it was necessary to develop a framework that can be used to define how the aim and objectives of this dissertation will be achieved.

2.9.2 Implementation Framework

2.9.2.1 Inputs and outputs

From my review of the literature on sustainable procurement aspects and topics related to the above defined objectives, an appropriate evaluation framework can be drawn based on this review on what will be a proper action plan to implement sustainable procurement in public sector in Ajman. The inputs for this framework will be the impact of drivers and barriers on the sustainable procurement process with the interaction with the PESTEL aspects as shown in **Figure 1 - A**. The outputs of the

framework will be the action plan to diffuse sustainable procurement and the process of monitoring this action plan as shown in **Figure 1 - B**.

2.9.2.2 Action plan & monitoring

It is necessary to establish a managing and following up process while developing the sustainable procurement process. Based on the literature review, action plan, managing and following up sustainable can be summarized by the following stages:

Stage 1: The preparation stage

In this stage, the existing procurement process within the organization will be assessed and investigated to create a baseline. A general assessment for the existing procurement process will help in determine if the sustainable procurement can be implemented for the whole organization or for particular departments within that organization. The literature showed that there are many models to follow while conducting this stage. The first model is the comprehensive model. This model is based on surveying the whole procurement activities in the organization to determine if sustainability can be implemented on the whole system or on particular departments or activities. This model is consuming long time and efforts but will create an comprehensive inventory of basic data. The second model is the simplified model. It is a straight forward approach involving the selection of one service or department and implements the sustainability procurement on it. The third model is a mixed model. It will mix the two models in one by selecting a range of services or departments and conduct a comprehensive data analysis then select one product or service and implement the sustainable procurement on it.

The selection of the services, products or departments is linked to many factors such as financial and human resources availability for implementation with the required level of skills and experience, the commitment of the implementation team, top

management support, the availability of sustainable alternatives for the services or products in the local market.

Stage 2: Identify SMART targets

This stage is very critical because it will indicate the level of the commitment that the team has to play in order to achieve the target. The target must be Specific, Measurable, Achievable, Reliable and Time bounded. These targets should be reported to the top management to give the confidence and seriousness of the conducted work. It can be used to measure the progress of the work done. The nature of the target differs from organization to another and from service to another. For example, if the sustainable procurement will be implemented in the Irrigation department, then a SMART target could be: re use 20% of the treated sewage water in irrigation of landscapes in 2010. Another example for SMART target for the Environment Department will be: reduce the solid waste production in the city by 5% in 2011.

Stage 3: Develop tasks and activities

In this stage, the tendering process for that specific service or department's activity will be targeted. It should include the tasks and responsibilities of every member involved in the implementation of sustainable procurement, the time frame for every task and for the whole implementation plan, the required resources, the methods and procedures that will be followed, the key performance indicators and before all of that a clear statement about the top management support and commitment for the implementation of the sustainable procurement process. Critical success factors for this stage will be training and communication. It is necessary to ensure that the team who will conduct the sustainable procurement action plan has the required level of skills and knowledge on how to do what. If not then adequate training should be

facilitated to ensure successful implantation. The communication is an important tool for effective implementation of sustainable procurement. The definition of sustainable procurement, its benefits and the tasks of the team who will implement it must be communicated to the whole organization to ensure the cooperation, support and full alignment. This can be done through public lectures, awareness campaigns and utilization of the Organization's intranet system.

Stage 4: Implementation

After developing the tasks, activities and assign the responsibility of the tasks to the concerned, the implementation stage is starting. Of course the team leader will play a vital role in ensuring the achievement of every task as per the time milestone, maintaining staff commitment and reporting to top management.

Stage 5: Monitoring and Reporting

The progress of the work should be monitored against the agreed targets and the key performance indicators identified in the action plan. There could be a need to review the targets and the indicators and adjust those if necessary especially if there were barriers or obstacles encountered during the implementation or any unforeseen difficulties or conditions.

Figure 1 - A: The Framework Inputs

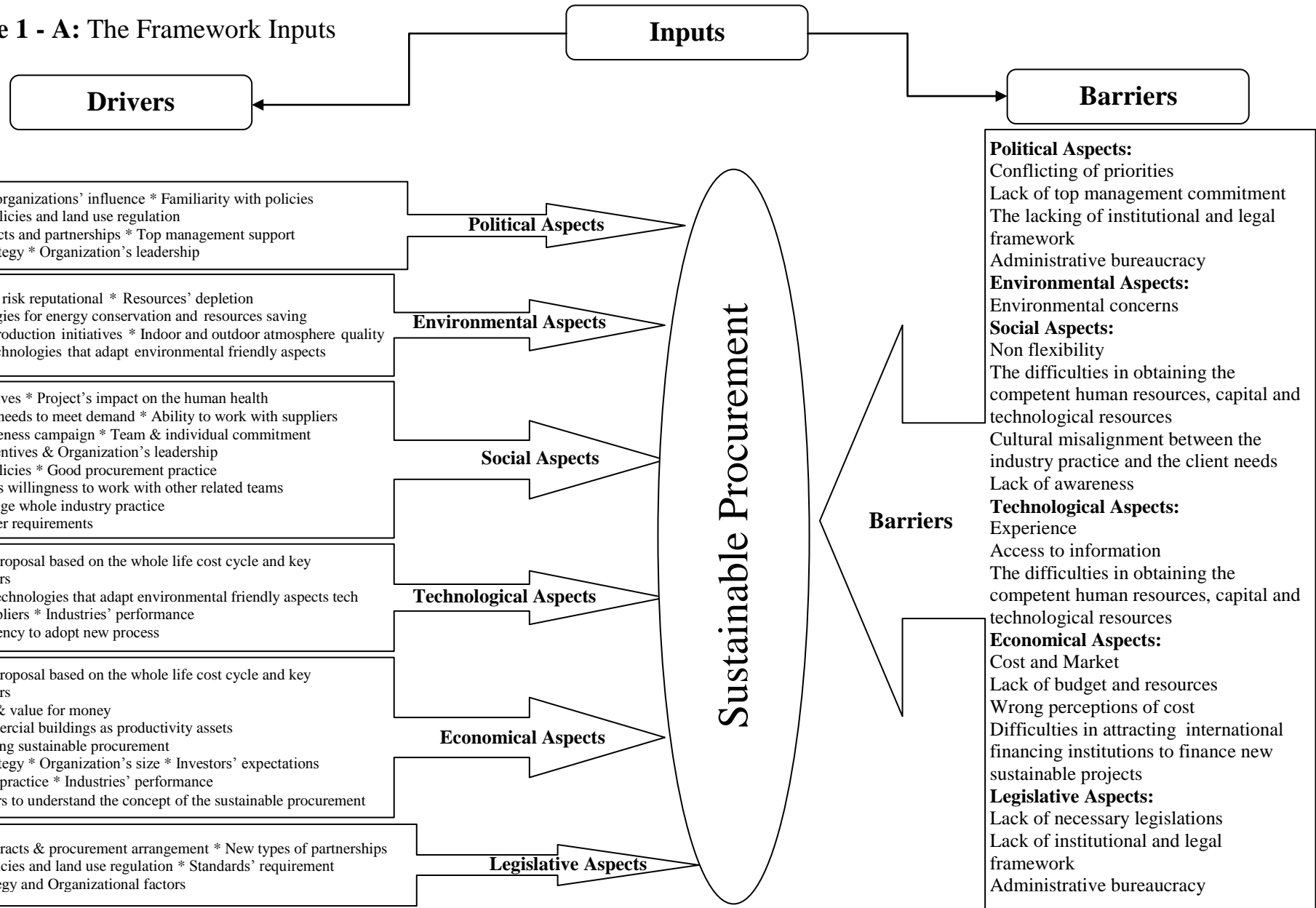
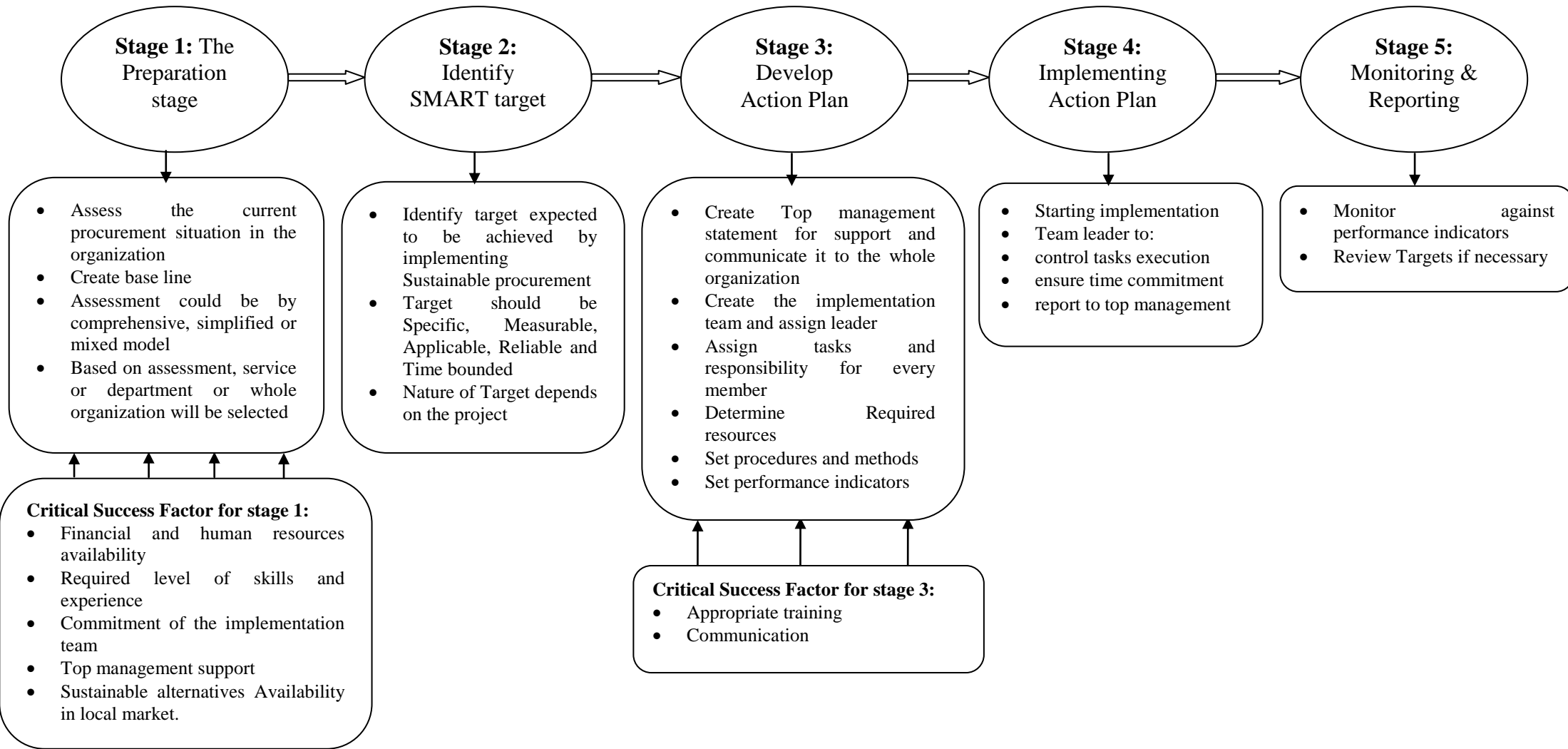


Figure 1 – B: The Framework Outputs

Framework Outputs = Implementation Action Plan & Follow Up



Chapter 3

Methodology

3.1 The Research Method

In order to obtain a comprehensive overview of the sustainable procurement concept and practices across the public sector in Ajman, the research had been focused to be within two public organizations at Ajman. Those organizations were: Ajman Municipality & Planning Department Organization (AM), and Ajman Sewerage Organization (ASO).

The reason behind narrowing the search to focus on those two organizations that Ajman had no database for public procurement professionals, which is one of the limitations for the research. Therefore, I have depended on my contacts and relations with the professionals in the above mentioned organizations due to the nature of my work that allow me to work on day to day basis with different departments within those organizations. Another limitation was that sustainable procurement is not a common and familiar subject to the public organizations in Ajman. Therefore, the research method depends on assessing the situation within these case studies, interviews with the different concerned representatives within those organizations and conducting focused group discussions. The one to one interview method allows me to explain and introduce the subject and extract from the discussions the perception of the representatives about the sustainable procurement.

From my review to the literature, I noticed that there were different approaches used by the authors to evaluate or assess the implementation of the sustainable procurement and identify the drivers, barriers and mechanisms. For example, Walker and Brammer (2009) used the survey method to evaluate the

sustainable procurement in UK's public sector. The survey included 106 organizations in UK. They had followed the "Snowballing sampling strategy" to email their survey to a wide list of contacts in public procurement and asked them to email it to their professional networks. The reason for that was the non availability of public procurement professionals' database within UK. Another method was used by Myers (2005) when he conducted a review of construction companies' attitude to sustainability in UK. In his research, the method involved a systematic review of the annual reports and documents issued by the construction companies for year 2003.

Nakou et al (2006) used Delphi method to assess the drivers for change toward sustainable construction in Greece. Delphi method was developed in 1950s. It is basically depend on intensive questionnaires for a group of experts in the field of the research. The questionnaires will be sent to the experts in multiple rounds with controlled opinion feedback. The results of the first round will be fed to the second round and so on. Iteration with controlled feedback, anonymity and statistical response are considered the main features of Delphi method.

In this research, none of the above methods could be used. The reasons for that were: the sustainable procurement concept is not a familiar subject to the public organizations in Ajman, there were no experts within Ajman to use the Delphi Method and the survey method will not serve the purpose as the expected feedback will not be accurate and relevant to the objectives of the research. Therefore, to assess the research methodology, the selected methods were focused group discussions and one to one interviews. By these particular methods it will be easier to facilitate explaining the concept of sustainable procurement in a friendly common language and to extract the maximum outputs during the discussion with the concerned people.

The procurement practices within these organizations will be compared to the developed framework in Section 9 of Chapter 2.

3.2 The Sample Organizations

Two public organizations were selected to assess the above identified objectives. 33 individuals from both organizations were interviewed to serve the objectives of this dissertation. The selected organizations were among the main public organizations in public sector in Ajman, which are: Ajman Municipality & Planning Department Organization (AM) and Ajman Sewerage Organization (ASO).

AM is responsible for setting different procedures, policies, monitoring environment, developing roads, buildings and storm water networks infrastructure. ASO is responsible for developing the sewerage infrastructure for the city.

Within AM, five departments were selected: The Buildings Department, The Roads & Infrastructure Department, The Environment & Public Health Department, The Purchasing & Contracts Department and the Planning & Survey Department. These departments were selected because they are responsible for the planning, designing and implementing the roads, buildings and storm water networks infrastructure and setting the necessary regulations and policies related to the environment and public health of the community. Also, monitoring of the environment and controlling air, sea and earth pollution is laying within the responsibility of this organization.

In ASO, the Technical and contracts Departments were selected as they are responsible for procuring the sewerage infrastructure projects.

The method was to interview the concerned people within those organizations and discuss with them the areas of concerns related to sustainable procurement.

Key people were identified in every organization and letters were sent to them explaining the objectives of the research, the areas of discussion during the interview and the expected outcomes.

The academic level of the selected people was varying between high diploma to master degree in different fields of Engineering, Planning, Business, Contracts, Procurement and Surveying. The sample includes people from different organizational level such as: Engineer, Head of Section, Director of Department and General manager of Organization. The names of the representatives were not mentioned in this research to respect their anonymity. **Tables 3 to 5** present the representatives details.

Table 3: Gender and Age of the Sample

Organization	Gender		Age			Total
	Male	Female	25 – 35	35 – 45	Above 45	
AM	20	3	2	19	2	23
ASO	8	2	1	6	3	10

Table 4: Academic level and background of the sample

Organization	Academic level			Academic background				
	Higher Diploma	Bachelor	Master	Engineering	Planning & Surveying	Contracts & Procurement	Environmental Science	Business Management
AM	1	18	4	10	5	3	3	2
ASO	0	9	1	4	1	1	1	3

Table 5: Management level and job nature of the sample

Organization	Management level						Job Nature			
	Employee	Head of unit	Head of section	Director of department	Executive manager	General manager of organization	Engineering	Procurement	Environment	Management & Planning
AM	3	5	8	5	1	1	15	2	4	2
ASPCL	2	0	3	2	2	1	4	1	2	3

3.3 The Areas of Discussions

In order to understand how the drivers and barriers will affect the sustainable procurement, it is necessary to clarify first the current procurement system implemented in public sector in Ajman. The system in Ajman is the traditional procurement system presented in **Figure 2**, which involves five main stages: defining subject matter of the project or product to be procured, defining the scope of work for the bidder, defining the technical specification of the project/product/service, defining the selection/awarding criteria that the procurer will consider with evaluating the bidders and finally defining the contract performance clauses stage. So, the sustainability aspects that would be integrated to transform traditional procurement to sustainable procurement are affecting some or all of the stages presented in **Figure 2** according to the project nature as shown in **Figure 3**. Sustainability aspects could be environmental or social issues.

Figure 2: A traditional procurement process

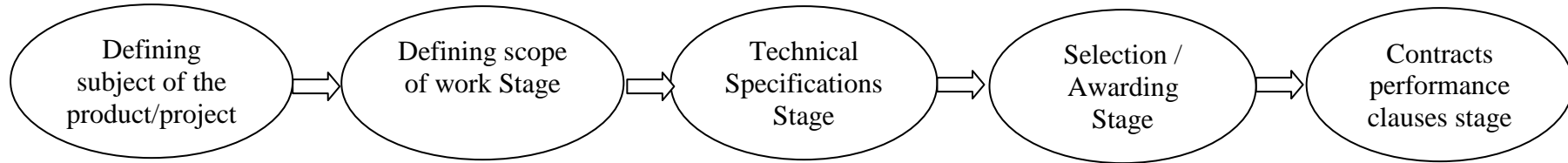
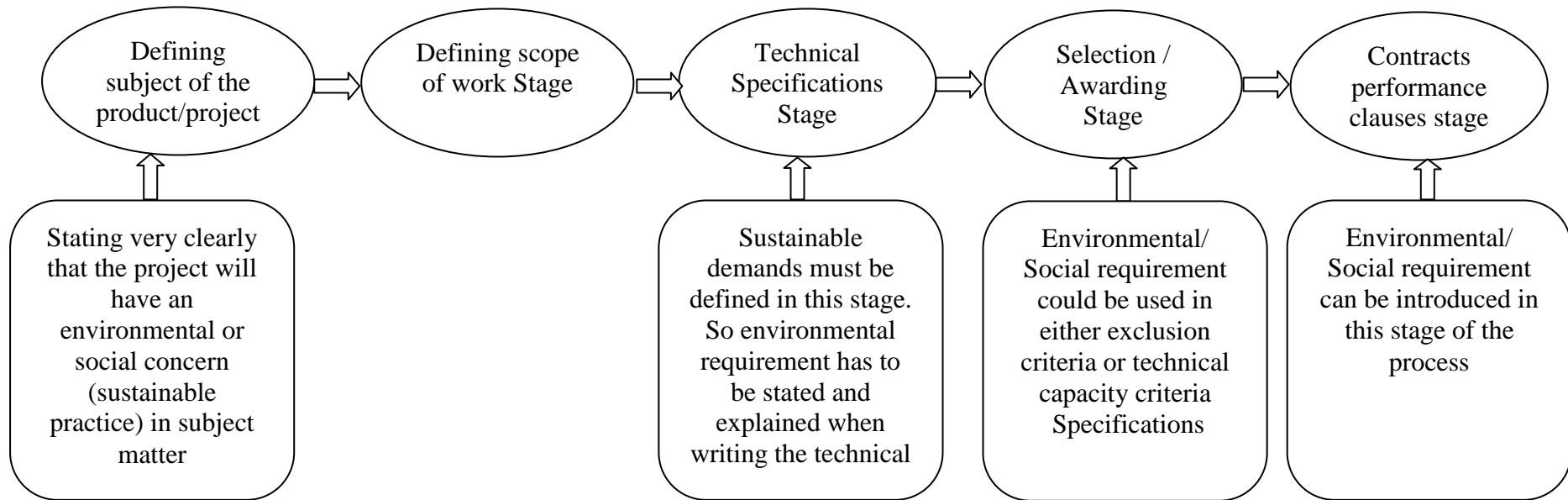


Figure 3: Integration of Sustainability in the Procurement



Based on the framework developed in Section (2.9) and the objectives of this dissertation, the following areas were selected for the discussion with the concerned departments in both organizations.

3.3.1 The concept of Sustainable Procurement

It was necessary to extract the perception of the concerned departments about the sustainability, sustainable development and sustainable procurement. Although this is not one of the dissertation's objectives, however it was very important to understand what is the level of knowledge that the representatives had. The questions that were asked are listed in **Table 6**.

3.3.2 Sustainable Procurement Drivers

Drivers for sustainable procurement were reviewed with the concerned departments. The idea for this review was to know if such drivers could encourage sustainable procurement implementation in public sector in Ajman or not. The representatives of the selected departments were asked if there are any other factors that can be considered as potential drivers to lead sustainable procurement implementation in public sector in Ajman. Waste reduction, resources conservation, environmental friendly construction materials, sustainable cleaning products, land use regulation, urban planning policies, education and training were some of the highlighted drivers. The questions asked during the discussions were listed in **Table 6**.

3.3.3 Sustainable Procurement Barriers

The barriers that were highlighted in the literature review were discussed with the departments and their opinions of these barriers were taken. Other possible barriers were explored with the representatives. The questions asked during the discussions were listed in **Table 6**.

3.3.4 Action plans

The representatives' view for the action plans that were implemented in other countries and the initiatives taken to support sustainable procurement implementation was investigated. The questions asked were listed in **Table 6**.

3.3.5 Impact of Sustainable Procurement

What impact could the sustainable procurement has from the political, environmental, social, technological, economical and legislative aspects. This was discussed and the questions asked were listed in **Table 6**.

3.3.6 Management behavior toward sustainability

The purpose of this subject is to investigate if there were any initiatives by Ajman Government to set performance requirement to minimize wastes and adapt sustainable practices and to set a policy for conservation of natural resources and minimizing wastage of these resources. If there were any policy announced; to what extent this policy was implemented and followed up. The questions were listed in **Table 6**.

Table 6: List of the questions

Objective	Area of Discussion	Questions Asked
-	The concept of Sustainable Procurement	<ul style="list-style-type: none"> • Did you hear about sustainability, sustainable development? • Do you have any idea what is sustainability and sustainable procurement ? • Do you think that sustainability and sustainable procurement are important? • In your opinion, why sustainable procurement is important? • In your opinion, what could be the benefits of implementing sustainable procurement?
1	Sustainable Procurement Drivers	<ul style="list-style-type: none"> • Do you think the following factors can encourage the sustainable procurement implementation? • How you will rank the importance of the following factors to consider them potential drivers? • Do you think that such drivers are existing at your department? • Is there any other factor you can consider as potential driver?

1	Sustainable Procurement Barriers	<ul style="list-style-type: none"> • Do you think the following factors can discourage the sustainable procurement implementation? • How you will rank the importance of the following factors to consider them potential barriers? • Do you think that such barriers are existing at your department? • Is there any other factor you can consider as potential barrier for implementing sustainable procurement other than the mentioned factors?
2	Action plans	<ul style="list-style-type: none"> • What do you think about the following action plans and initiatives implemented in other countries? • Do you think that such initiatives can be implemented in your organization?
3	Impact of Sustainable Procurement	<ul style="list-style-type: none"> • In your opinion, how the sustainable procurement can be affected by the following aspects: Political, Environmental, Technological, Economical and Legislative aspects? • Is there any policy or regulation issued in Ajman supporting sustainability?
-	Management behavior toward sustainability	<ul style="list-style-type: none"> • Do you think that top management in your organization support sustainability aspects? • How do you see the role of the government in implementing sustainable procurement?

Chapter 4

Data Analysis, Findings and Discussions

4.1 Findings & Results of Case studies

The developed framework in Section 9 Chapter 2 had identified the inputs to be the drivers and barriers with the PESTEL impact. The outputs of the framework will be the action plan to implement sustainable procurement at Ajman's public sector. Two organizations were selected to assess their current procurement system and investigate what could be considered as drivers and barriers for the implementation of sustainable procurement. The findings from both organizations are presented in the following sections.

4.1.1 Case Study 1: Ajman Municipality & Planning Organization

23 people from different academic background and management level were interviewed at this organization as was explained in Chapter 3 of this dissertation. The representatives of the selected departments at this organization expressed a general understanding about sustainability & sustainable development. However, sustainable procurement concept was not very clear. Interviewees agreed in a way or another that most of the factors mentioned in **Table 1** of Chapter 2 are considered to be drivers for implementing sustainability and sustainable procurement. This was extracted after the concept of sustainable procurement was explained to each of them with considering his/her academic background and management level at the organization. At the same time, some of the representatives had expressed that the mentioned factors when utilized in positive way they considered as drivers and when utilized in negative way then they considered as barriers and obstacles. To elaborate more on this issue, availability of legislation to support sustainable procurement is a potential driver

whereas lack of legislation is a potential barrier. Similar outcomes were obtained when the different barriers presented in **Table 2** of Chapter 2 were discussed.

All of them had agreed that the main barriers for implementing sustainable procurement are the experience, the knowledge, the lack of necessary local orders or legislations that would enforce the implementation, the public awareness, the culture of the community and end users and finally the lack of local financial institutions and banks that would understand and accept to finance sustainable projects and adopt sustainable policy within their financing system. It was interested to know from the interviewees that there were many sustainable initiatives proposed from different parties in the community to reduce the wastes dumping at the landfill. However, such initiatives were not allowed to reach the implementation stage because there were no supporting legislations that would enforce the execution of such initiatives. An example for these initiatives was an investor who approached the Municipality department with a proposal to take all the wasted papers from different types and recycle them to produce paper that can be used for printing invitation cards, files, note pads, note books, greeting cards ... etc. The Municipality was excited about the proposal because it will reduce its expenses in transporting this type of wastes to the landfill and will reduce operation and maintenance cost of the dumping activities at the landfill site. In addition to the mentioned benefits, it will generate an income to Municipality because the investor offers to buy this waste from them. So the Municipality encouraged the investor to go forward and establish his factory. However, the investor was disappointed by the market demand. There were no interests in the market to buy his final products. He was challenged with the resistance from the end users who refused to buy his products and that caused non feasibility of his project. Therefore, the investor did not go forward with his proposal because there

was no financial feasibility for him. The lack of the necessary legislation to oblige the market and end users to buy sustainable products had considered to be a potential barrier for this project from going ahead. Also, the lack of awareness and adopting the concept of corporate social responsibility was another barrier, which impacted negatively on sustainable practices. Another interesting example raised by one of the interviewee at a senior management level was the impact of competent suppliers' availability from negative and positive point of view. A real example that was experienced at the Municipality was the decision of privatizing the wastes transportation in order to relief the municipality from this task and encourage the private sector to be more responsible and innovative in transporting the wastes and handle it with the minimum impact on the environment and the community. At the same time the economy of Ajman will be refreshed with more public private interaction. So that decision was seem to be a win – win situation for all parties. The municipality went forward and issued the necessary legislation to support the implementation of this decision. Then when the implementation stage came, the municipality was shocked to know that there were no suppliers in Ajman local market that would offer this service. Moreover, the available suppliers were available in Dubai and Sharjah but none of them was at Ajman. However, the municipality learned from this experience that before adopting any changes to the current system, proper and intensive market study should be conducted. The positive point of view was that the municipality had learned its lesson for the future projects and around 13 suppliers came to Ajman and flourish the industry of waste transportation. Most of the representatives believed that although the procurement system at their organization is traditional procurement system, it is still flexible and allow them to do the selection by depending on different criteria other than the cost. However, such

privilege is not available for procuring all the products and services within the organization as understood from the interviewees working at the contract and purchasing department. The contracts and purchasing department team had expressed that the major criterion for selection between products and services during the procurement process is the cost. However, other criteria are considered when the procured service or product is related to technical departments. They mentioned that the technical departments have to justify in a clear way why those other criteria must be considered. Once proper justification is provided then the contracts and purchasing department will process the procurement order for the selected item regardless its cost. There were few initiatives supported by necessary legislations implemented in this Organization such as:

- Preventing the usage of non degradable plastic bags and replace them with degradable plastic bags. This initiative was supported by a legislation in form of local order issued by the Chairman of the Municipality and Planning Organization. The objective of this initiative was to protect the environment from the impact that non degradable bags had and to reduce the wastes production and accumulation.
- An interesting initiative that was implemented at the Municipality was the Abattoirs' Fats initiative. The usual practice at the Abattoir was to dispose the fats separated from the animals and the Abattoir's wastes at the landfill. This kind of waste was the worst type because it needs to be dumped on the same day to avoid nuisance to the surrounding environment. Some investors approached the municipality with proposal to buy this fats and wastes and convert them to good and useful material. These investors were taking the fats and extract different products that would be sold to other industries to

manufacture candles and to process cooking oils. There was a great demand for this product. One of the interviewees at the senior management level estimated that the municipality's revenue from selling the fats to this investor was around 17000 Dirham at the beginning per year and started to grow over a period of 3 years to reach to (400,000) Dirham per year. So this example showed that environmental benefit was achieved by reducing the fats dumping at the landfill and its effect on the environment and at the same time an economical benefit represented by generating good income annually from this service.

- An example for an interesting initiative implemented at the municipality was to use the organic fertilizer produced from the wastes instead of the chemical fertilizer. The benefits of this initiative were really serving the sustainable development principles, which are Environment, Society and Economy. It served the environment because the amount of the wastes that is dumped at the landfill was reduced and converted to useful fertilizing product. It served the society by increasing the greeneries and landscapes and at the same time protects the future generation environment. It served the economy because it reduced the operational cost associated with transporting and disposing the wastes.
- Energy conservation policy implemented at the Municipality and Planning Organization's buildings and offices. Saving electricity tips are communicated to all the employees by utilizing Intranet to circulate tips on how electricity and water can be saved and distributing leaflets and posters at the different branches and offices of the organization.

- Preventing the use of ground water for industries purposes and monitoring the wells digging. This initiative was supported by an Amiri Decree issued by the Ruler of Ajman. The purpose of this initiative was to reduce the depletion of ground water and encourage the industries to start re use the treated wastewater produced from the wastewater treatment plant, which is considered to be very sustainable source of water.
- The construction of a reverse osmosis treatment plant that is further treating the treated wastewater produced from the wastewater treatment plant to better quality that can be used in district cooling and construction purposes. The quality of the treated water produced from the reverse osmosis plant is very high and very close to the drinking water quality. There is a good demand for this water at the industries and it is starting to replace the sweet water in many applications. This is considered one of the best initiatives that are serving sustainability in a strong way.
- The initiative of clean production in collaboration with the Ministry of Environment. This initiative was targeting the different industries at Ajman to adopt production system with better performance and minimum negative impact on the surrounding environment. The environment and public health department at the Municipality is playing a key role in monitoring this initiative and enforce its implementation.
- The initiative of encouraging industries to adapt environmental systems by issuing an Environmental performance scorecard by Municipality. This score card will record the performance indicators and the corrective measures necessary to improve the performance and achieve the indicators when there is a deviation from the target.

All of the interviewees at this organization had agreed that there is still a lack of necessary legislations to transform the whole traditional procurement to sustainable procurement in the whole organization. Also, the top management support and approval for this concept is very necessary. They had expressed that their top management is flexible and if the concept sold to them in a logical and right way then for sure they will adopt it and implement it. Therefore, a key success factor is how to sell and present the idea. The interviewees had expressed that there is a need to change the whole society culture. The mothers and wives need to have awareness and education about the importance of sustainability aspects. It has to start from the homes. The interviewees recommended that students at all level need to be educated about this subject. The education could be in form of classes, school exhibitions, public lectures, site visits to the environmental places like landfills and wastewater treatment plant and wastes sorting facility to make the students aware of the problem's size and urge them to change their habits toward more sustainable environment. The interviewees emphasized the importance of corporate social responsibility adaptation by the government, public and private departments to enhance sustainable procurement and sustainable development implementation. According to the interviewees, the government had to play a crucial role in steering the sustainability wheel. Its role has many tasks, which includes but not limited to enacting necessary legislations, subsidizing sustainable services, encouraging suppliers innovations for sustainable products and services through incentives of discounts, tax reduction, trade license facilities and easier renewal permissions, adopt new contracts formats and encourage public private partnership set up. These types of incentives and government support will enhance the market economy and maintain better community. Also the role of the public and private sectors will be integrated in

a better way. However, the question that was raised by the senior managers at this organization is who will be selling this concept in the right way and who has the necessary skills and knowledge to explain the principles of the sustainable procurement and be capable of leading the implementation if required. This was the most important concern of the senior managers at this organization.

4.1.2 Case study 2: Ajman Sewerage Organization

10 people from different academic background and management level were interviewed at this organization as was explained in Chapter 3 of this dissertation. When the question was asked on to what extent the interviewee was aware and familiar with sustainability and sustainable development, different responds were obtained and all of them were around conserving resources and environment. Most of the interviewees understood the concept of sustainability to be around saving water, saving energy, writing on recycle papers, protecting environment from the pollutions, minimizing wastes production, moving toward green buildings, adapting thermal insulation, reduce carbon emissions and local sourcing for the services instead of importing. This perception was very interesting because although the level of the interviewees varied between different academic and management levels, they were sharing the same perception of sustainability definition in a way or another.

The most important aspect that was challenged by the interviewees was related to the general definition of sustainability, which is “Meeting present generation’s needs without compromising the future generation’s needs”. The challenge raised by the interviewees was on how to quantify and determine those needs and what will be the right formula to calculate those needs.

The sustainable procurement concept was not clear for the interviewees, and when the definitions extracted from the literature were explained they had agreed and

accepted that these definitions are describing how sustainability aspects were incorporated in procurement process. The top management of this organization believed that the corporate role of Ajman Sewerage Organization was to serve the community and the environment, which they considered that it is serving the sustainability and sustainable development to great extent. All of the interviewees were aligned with their top management interpretation for the sustainability integration in the organization's core process. To elaborate more on this issue, the interviewees expressed that the organization is matching the concept of producing good service to the community by utilizing the local sources that are already existing in the community, offering job opportunities and enhancing the market of Ajman community. Ajman local market is influencing the success of Ajman sewerage project, because if Ajman market was not successful then the whole Ajman sewerage organization will collapse and will not be successful as it is now. Moreover, the core process of this organization is to collect the wastewater and treat it to very good quality level that make it an attractive sustainable source of water that could be used in many applications such as irrigation purposes of landscapes, parks and gardens, construction purposes, fire fighting purposes and district cooling purposes. This is in alignment with sustainability aspects because it is converting dirty water to clean water and thus protect the environment from the pollution associated with this dirty water and maintain a stable and sustainable source of good quality water for the different applications.

The discussion with the interviewees at this organization covered many topics that elaborate how sustainability aspects were integrated. This organization is aligned to certain extent with sustainable development principles (Economy, Community and

Environment). The following part is elaborating this aspect more comprehensively based on the extracted outcomes from the interviewees at this organization.

During the construction of sewerage infrastructure, the number of the workers that were employed and recruited to work on this project was estimated to be around 1500 person. This had small, localized beneficial impact on some businesses (particularly shops) where the construction workers choose to spend their earnings. However, it was anticipated that most of the money earned by the construction workers was exported to their home countries. This had contributed to the Economy of Ajman and the significant impact was that Ajman became more attractive place to invest with the necessary infrastructure in place.

There is no specific legislation in Ajman which directly requires projects to consider impacts on community or socio-economic resources. The only highlight was within the Federal Law No (24) 1999 regarding Environmental Impact of Establishments states that impacts on all sensitive resources should be considered. However, the sewerage project had very good impact on the social life within Ajman Community. It ensured that a clean and healthy environment that will create a comfort living atmosphere for the community members was achieved. Also, it increased the attraction opportunities for other developers to approach Ajman when such infrastructure is available.

As the nature of this project is related to a great extent to the environment, the organization had to consider the environmental impact of its project on the society therefore it was necessary to conduct an environmental appraisal of the organization activities for the following reasons:

- To ensure that the project minimizes its negative impact on the environment

- To ascertain whether the project complies with national (Federal, i.e. UAE) and state (Ajman) Legislations

Since UAE legislation was in a developmental form when the organization started its work, international standards and guidelines had been considered. This organization investigated all direct and indirect impacts of the project and set out preliminary mitigation measures, where possible, to alleviate impacts on the environment. This was integrated to sustainable development aspect in a strong way.

The possible impact of building sewerage infrastructure at that time on the environment was around the following areas:

Air Quality

A. Impact:

The potential source that could affect the air quality was the dust, which can be generated during construction activities. The activities, which had the greatest potential to generate dust, were the main laying construction works, excavations at the proposed pumping station locations and treatment plant site formation works. The greatest potential for dust generation was from wind erosion of open aggregate and excavated material storage piles and exposed areas. Other identified air quality impact sources include haul traffic exhaust emissions, construction plant emissions as well as the concrete batching plant that was located at the treatment plant site.

B. Mitigation Measures:

The organization took the following control measures to mitigate the risk of the dust on the air quality:

- The heights from which excavated materials were dropped maintained as low as practical to minimize the dust arising from unloading
- Stockpiles of aggregate was removed from site and dampened

- Water sprays were used to control potential dust emission sources
- Periodic sweeping and watering of paved site access were maintained

Noise and Vibration

A. Impact:

The major potential source during the construction works was the use of powered mechanical equipment (PME). In order to facilitate the installation of the wastewater collection system, the pumping stations and the treatment plant, potentially noisy activities included:

- Sheet piling
- Excavation
- The breaking up of paved and unpaved surfaces
- Dewatering pumps

B. Mitigation Measures:

Many actions were undertaken to minimize this nuisance such as:

- Heavy vehicle movements only made during scheduled working hours.
- Work not to extend beyond normal working hours.
- Silencing of noisy equipment, particularly diesel-engine plant.
- Efficient management of the construction program and crews to ensure that periods of noisy activities were minimized.

Soils

A. Impact:

Construction of the sewerage system did not have great impact upon any important geological features or result in the loss of any soils of importance. During the construction phase, excavations were required to facilitate sewer pipe laying and pumping stations and treatment plant construction.

B. Mitigation measures:

Although major risks associated with land contamination were not anticipated, the organization put in place actions to ensure that any such excavated material was appropriately handled and disposed of, and that site workers were adequately protected. Chemicals used during both construction and operation were stored and handled in a manner that did not lead to ground contamination.

The above outcomes showed that this organization had aligned its processes, operation and activities with sustainable development principles to great extent.

All of the factors mentioned in **Table 1** of Chapter 2 were agreed by the interviewees to be potential drivers for sustainable procurement implementation. The main driver that was considered to be the potential factor was the necessary legislations and the top management support for this concept. Another important factor was the desire to reduce risk reputation. This driver is ensuring that high certainty for the materials and equipment high quality can be achieved. Another factor that was considered very important by the interviewees was understanding the needs to meet the demand. This factor will serve the quality accreditation and quality assurance at the different organizational level. According to the interviewees, the organization's strategy has great influence in driving or delaying sustainable procurement implementation. This is because the organization has to adopt clear and simple procedures to implement sustainable procurement. At the same time, the organization has to accept the suppliers who were accredited as per the international accreditation systems and it should not complicate the accreditation criteria.

The interviewees were concerned that although their organization had aligned to great extent with sustainable development principles in light of what was discussed and elaborate above, there are still some practices that are opposite to sustainability.

For example, surplus treated water produced from the treatment plant is discharged to the sea. This treated water has an impact on the marine life and could contribute to negative phenomena. So although there are some initiatives to utilize all of the produced treated water, still there is no legislation that will enforce 100% utilization of treated water and zero discharge to the sea. Therefore, the lack of necessary legislation and laws that enforce the implementation of sustainability aspects and adopt sustainable procurement in the whole public sector was considered the main barrier by the interviewees. Other factors mentioned in **Table 2** were agreed by the interviewees that are potential barriers to implement sustainable procurement at the public sector in Ajman.

When the different action and diffusion mechanisms implemented in other countries were discussed with the interviewees, some of them had agreed that such mechanisms could be useful and effective. However, other interviewees had disagreed with these mechanisms. Their argument was that what was appropriate for EU countries is not necessary appropriate for Ajman public sector. They had expressed their concern about that because many organizations tried to take other countries models and implement it at their organizations and experienced failures in achieving the targets. The interviewees stated that it is very important and very crucial to assess what will be appropriate for every department individually before implementing a full scheme on the whole sector.

The general recommendations that were extracted from the interviewees were that:

- Necessary support from the government is crucial to implement sustainable procurement successfully in the public sector;
- Government subsidies for some public services need to be granted to the organizations that will implement sustainable procurement as an incentive;

- Classes on sustainability and sustainable procurement concepts must be offered at the schools, colleges and institutions to make the students at all levels aware of this important concept.
- The top management of any organization must convey and communicate their commitment to sustainability and sustainable procurement by stating simple key message in their corporate strategy, which will be communicated to the whole team at the organization. Also, clear and simple methods and procedures should be in place to avoid misunderstanding, conflict and misinterpretation for the sustainable procurement concept.
- If sustainable procurement to be implemented, then it should be first implemented for the easier and straight forward services. This will help to see the positive impact of sustainable procurement in a short time and then adopt that on the full scheme.

4.2 Analysis and Discussions

The outcomes of the case studies were very interested and useful to form a general idea about the situation Ajman's public sector. The general understanding of sustainability, sustainable development and sustainable procurement at the case studies raised the need for intensive awareness, education and elaboration on these aspects to prepare capable resources with the required level of knowledge and skills to tackle the sustainable procurement implementation. It was very interesting to know that there were many sustainable initiatives implemented already in Ajman's public sector. However, these initiatives were scattered and not integrated to a general and common sustainable scheme or policy.

The results of both case studies indicate that the most important factors that will affect the implementation of sustainable procurement at Ajman's public sector

were government support, necessary legislations, understanding the sustainable procurement concept, the financial impact of sustainable procurement and the society awareness of sustainability aspects.

The following is a snapshot analysis of what had been discussed and extracted from the interviewees at both organizations above. This can be considered to be general challenges that could face sustainable procurement implementation in Ajman's public sector:

A. Defining sustainability criteria

One of the challenges that were raised during the discussion was the lack of definition of a sustainable service or product and how to state that in the tender document. That is why it is necessary to educate and train the employees about sustainability and sustainable procurement by classes and intensive training programs to absorb this concept. It is very important to build the capacity within the organization in order to adopt such concept.

B. Lack of legislations

It is not compulsory to adopt sustainable practices and hence there is a lack of necessary laws and regulations that can enforce implementation of sustainable practices. Again it is the role of the organization and the government to enact the necessary legislations.

C. Sustainability is Expensive

There is a common misconception that procuring sustainable product or service is always an expensive option. The hidden and indirect costs resulted from the operation and maintenance activities were not realized by different public departments. Although the sustainable procurement is implying procuring expensive services and products, however, when the real and hidden expenditures are presented then it will

be realized that it is more efficient to adopt sustainable aspects while procuring the product or the service. It is a fact that the upfront cost of the sustainable service/product is more than the traditional service due to the inclusion of a premium for the design and technology. However, for the whole life cycle cost that include operation, maintenance, replacement, renewal and disposal costs then the sustainable service proves to compete the traditional service.

D. Government support

Government support and encouragement in form of incentives, subsidizing of sustainable services, believe in sustainability and adopt sustainable policies on personal and corporate level is crucial for successful implementation of sustainable procurement. In addition to that it is to emphasize upon the top management commitment and the alignment of sustainable procurement in the whole organization strategy. The top management support has to be communicated to the whole organization through setting up the corporate vision and simple procedures of implementing sustainable procurement.

E. Culture and Awareness

There is a lack of awareness and understanding for the sustainability and sustainable procurement aspects. There is an urgent requirement for education, awareness and corporate social responsibility adaptation on different community level.

Based on the findings and the analysis presented above, general and specific policies can be adopted. The general policy can include sustainable urban development, developing educational and awareness campaigns for the different community sectors starting from homes up to the universities, developing awareness campaigns and master classes for the employees at the different public sector's departments and drawing the legislative framework for the necessary laws and local

orders or administrative orders that will enforce the implementation of sustainable procurement at the public sector.

The specific policy may include many mechanisms and one of these mechanisms is what was proposed in Section 9 of Chapter 2 as an appropriate and practical action plan to implement sustainable procurement. That plan consists of five stages including the preparation, identification of SMART targets, development of tasks and responsibilities, implementation of tasks, monitoring and follow up of outputs.

An effective and supportive mechanism that can be used in parallel with the proposed action plan is to have a central procurement and inventory control department among the public sector departments. Through a centralized procurement department, sustainability aspects can be adapted more efficiently. There are many benefits, which can be obtained when such mechanism is implemented. The first benefit is the merging of the skills, knowledge and experience of different teams in one team, which will empower the public sector and increase its competency. The second benefit will be in the financial aspect. When many departments are procuring common products or services, the number or quantity of the procured items will be bigger than one department order. This will encourage the suppliers to offer attractive products and services that are in line with the sustainable criteria. This will increase the public sector marketing power and its influence. The third benefit will be in form of reducing the administrative costs as instead of many procurement departments in every organization, there will one central joint procurement department serving the public sector in Ajman.

The central joint procurement concept can be efficient in many ways beside the above mentioned benefits. One of way of looking at it will be through its ability to facilitate the introduction of sustainable products and services in all the departments because

even if some departments will be reluctant or not convinced about the sustainability benefits, they can be persuaded when they will realize that being a member of joint procurement will give them the privilege of procuring the same items with reduced prices. That will be achieved when the supplier will bid for huge bulk order instead of individual order. Another way will be the call for more innovative products and services. The supplier/manufacture will find it attractive to be innovative and creative in supplying/manufacturing products/services that are in line with the sustainability and environmental friendly. Also, when the demand for sustainable services is increasing then the price for these services will reduce naturally. At the same time, the market will be more attractive and encourage the suppliers to introduce new brands of products and technologies that are sustainable and available in other countries. Another key value for the central joint procurement will be the ability to standardize the sustainable demand criteria and thus enacting the necessary laws and regulation to enforce the implementation of sustainable procurement.

At this stage of the dissertation, I believe that the developed action plan can be implemented in some public departments to assess its feasibility. The selected department or service must be simple and easy to implement sustainable procurement aspects on it. Also, it is necessary to select a service or a department that when implementing sustainable procurement, the positive impact of sustainable procurement implementation and the benefits associated with it would be noticed instantly and with fast track.

Chapter 5

Conclusion and Recommendations

5.1 Conclusion

Sustainability, sustainable development and sustainable procurement concepts were considered among the top agenda items in many countries in the last 20 years. Many researchers were active in defining these concepts and exploring the impact of sustainability on the community and the industry. There was a common understanding and agreement that through sustainability, the present generation's needs can be met without compromising the future generation's needs. Sustainable development in any part of the world can serve three main areas, which are Environment, Society and Economy. Sustainable procurement is necessary for any organization to be in alignment with sustainable development aspect. Through sustainable procurement, the organization can procure the service or the product with considering not only the value for money but satisfying the society needs without creating negative impact on the environment. The sustainable procurement is considered to be a smart option, because it can reduce the environmental impact that any service or project will have during its life cycle and will encourage the social improvement by ensuring good environment conditions for all the community members. Moreover, the sustainable procurement can improve the procurement efficiency from the financial aspects when considering the whole life cost. Therefore, environmental, social and financial benefits can be achieved while improving the efficiency of the public procurement. The main aim of this dissertation was to develop an effective and practical action plan to introduce sustainable procurement system to the public sector in the Emirate of Ajman. The research was narrowed on three main areas: potential drivers and barriers

affecting the implementation of sustainable procurement, diffusion mechanisms for smooth implementation of sustainable procurement and finally the PESTEL's impact on sustainable procurement implementation. Comprehensive literature review was conducted to fulfill the requirement of the research. Based on the literature, a general framework was proposed and an action plan for sustainable procurement implementation was developed. In order to assess the efficiency of the developed action plan and investigate its feasibility for the public sector in Ajman, two public organizations were selected and 33 people were interviewed from these organizations. Case studies, interviews and focused group discussions were the methods used for this research. Survey method could not be used because the concept is not common in Ajman and therefore the responds from the survey may not be accurate and representative of the real situation. It was found that for implementing sustainable procurement, many factors can affect this process by being facilitators and drivers or being obstacles and barriers. The factors revealed from the case studies were considered the most common and strong factors, which are the legislations, the government support, the financial aspect of sustainable procurement, the understanding of the sustainable procurement concept and the necessary awareness and corporate social responsibility aspects. There were many sustainable initiatives implemented in Ajman by both organizations. However, these initiatives were scattered and not incorporated in a common general sustainable scheme for the whole public sector in Ajman. It was interesting to know that the top management in Ajman is flexible and therefore sustainable aspects can be adopted if there was a strong and effective presentation and selling out of the concept. The developed action plan can be implemented in few departments at the public organizations in Ajman and the selection of these departments has to be careful to not select complicated department.

Easy services and departments with straight forward processes can be selected to be the pilot trial for implementing the developed action plan. Once the results of implementing sustainable procurement at these departments are achieved then it will be easy to convince the other departments to adopt this mechanism. At this time, the central joint procurement department concept can be introduced to achieve the maximum benefits of sustainable procurement implementation at Ajman's public sector. Accordingly necessary legislations need to be issued and in parallel to that intensive awareness campaigns should be launched for the public to educate them about sustainability and sustainable procurement concept and benefits.

It is necessary to emphasize on the need for more researches in this topic to cover all of the public sector's departments in Ajman. This dissertation was an attempt to draw the road map for the coming researches on the current situation in some of the public sector's departments at Ajman.

5.2 Recommendations

- The top management of any organization should convey and communicate their commitment to sustainability and sustainable procurement to the whole team at the organization.
- Top management must ensure that clear and simple methods and procedures for implementing sustainable procurement are in place to avoid misunderstanding, conflict and misinterpretation for the sustainable procurement concept.
- Necessary support from the government is crucial to implement sustainable procurement successfully in the public sector especially enacting necessary legislations.

- Government's incentives can be in form of government's subsidies for some public services granted to the organizations that will implement sustainable procurement as an incentive.
- Encouraging suppliers' innovations for sustainable products and services through government's incentives of discounts, tax reduction, trade license facilities and easier renewal permissions, adopt new contracts formats and encourage public private partnership set up.
- It is very important to have corporate social responsibility adaptation by the government, public and private departments to enhance sustainable procurement and sustainable development implementation.
- Classes on sustainability and sustainable procurement concepts must be offered at the schools, colleges and institutions to make the students at all levels aware of this important concept. The education could be in form of classes, school exhibitions, public lectures, site visits to the environmental places like landfills and wastewater treatment plant and wastes sorting facility to make the students aware of the problem's size and urge them to change their habits toward more sustainable environment.
- Intensive training programs should be facilitated at the different organizations levels to ensure capacity building, knowledge improvement and skills enhancements.
- There is a need to change the whole society culture. The mothers and wives need to have awareness and education about the importance of sustainability aspects. It has to start from the homes.
- The different departments within the public sector in Ajman can have a central joint procurement department. This will enhance and improve the whole

procurement process. Central joint procurement has many benefits in different aspects as illustrated in section 2 of Chapter 4.

- The procurement scorecard can be introduced to the departments to deal with the real expenditure behind the traditional procurement and how sustainable procurement can assure a competing cost. All the purchases and expenditures related to the sustainable procurement activity will be recorded in this card on yearly basis. Also, all the hidden costs related to that service or product will be recorded in this card to observe the change in the spending over the years.
- Establishing research and development centre in Ajman to have further researches on sustainability and sustainable procurement implementation.

Chapter 6

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