

SUSTAINABILITY CONCERNING TO PUBLIC PROCUREMENT PROCESS IN CONSTRUCTION: LITERATURE REVIEW

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ABSTRACT

In the year 1977, economy of Sri Lanka liberalised and opened up to foreign market with investment to deregulate domestic construction industry. Further, the economy has shown transition features since 2009, after end of 30 years' war. Public Procurement Process (PPP) mainly considers satisfaction of the stakeholders in line with development objectives of the country. Hence the PPP is the integral part of economic development of the country. However, the economic development of Sri Lanka has shown lagging features when compared to economic history of other developed countries due to the reasons that the existing PPP has not given fullest uplift in line with current global requirement.

Thus, the practitioners in the industry should find the way to enhance and upgrade the existing PPP to link with available challenges. Literature revealed that developed countries have utilised numbers of benefits by implementing Sustainable Public Procurement Process (SPPP). Accordingly, incorporate the sustainability concerns than the time, cost, and quality aspect to the existing PPP is one of the best practicable and cost effective possible alternative solutions to bridge the gap. Thus, this paper focused on detailed analysis on sustainable concerning to PPP with in Sri Lankan context base on secondary data.

Hence, relevant areas scrutinised through the comprehensive literature review to achieve the objectives of the study. Further, experts in the field of procurement also consulted to gather the opinions and views in order to evaluate the feasibility of desired outcomes.

Keywords: Construction Industry; Procurement; Public Procurement; Sustainable Public Procurement.

1. INTRODUCTION

The procurement process was used effectively in many industries as the key part when acquire goods, works and services by given equal weightage to the aspects of time, cost and quality in order to achieve desired objectives of the organisation. Presently, the procurement process plays a major role not only in the organisation but also in the country to achieve their mission and vision (Wales, 2010; Walker and Brammer 2009; National Procurement Agency, 2006).

The activities of the procurement identified as continues processes from risk assessment, selection of source, evaluation of alternative solutions, contract award, payment, and management of a contract up to the end of defect liability period (Manu, 2005; National Procurement Agency, 2006). The procurement process in construction industry was identified as very sensitive to change in line with the requirement of external environment of economic, political, financial, legal and technological. Thus, the construction industries in the world are striving to tackle these changes through the new and innovative ways of construction, efficient resource utilisation and better organisation of the activities of the projects (Rameezdeen and Silva, 2002). Accordingly, contemporary version of the existing procurement process that link with requirement of external environment as per the global needs has identified as sustainable procurement. Sustainable Procurement Process (SPP) documented as broader and long term concept. Besides the sustainable procurement has direct link with the sustainable development of the country. Hence SPP concluded as an integral part in order to achieve the present global needs and uplift the economy of the country and living standards of the stakeholders (Kim and Shunk, 2004; World Bank, 2010; Hawkins *et al.*, 2011; Srivastava, 2007; Preuss, 2009; Walker and Brammer 2009; Nijaki and Worrel, 2012; Williams *et al.*, 2007).

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The aim of the paper is to discuss the applicability of SPPP as a best practice to overcome the existing challenges of the PPP in the construction industry. The scope covers introduction, significant, and challenges of the PPP. Accordingly focuses on critical literature identified the SPPP as best remedial measure to the challenges and bridge the gap in line with the global needs of the stakeholders, further, forwards to discussions with future research agenda. The paper mainly based on the secondary data.

2. PUBLIC PROCUREMENT PROCESS (PPP) IN CONSTRUCTION INDUSTRY AND ITS SIGNIFICANCE

The categorisation of the procurement process mainly depends on the way of implementation of ethics and strategies of the process. Hawkins *et al.* (2011) divided the procurement process into two groups; procurement for profit and not for profit. Furthermore, identified that procurement process for profit behaves towards opportunistically and conversely, moreover, argued that not for profit behave towards more opportunistically while not considering opportunities of subordinators' behaviours. However, the procurement process on not for profit has room for development of the process. Finally, noted that not for profit ethics and strategies are used in public procurement (Manu, 2005). National Procurement Agency (2006) mentioned that public procurement is used by Procuring Entities (PE) to obtain goods, services or works by the most appropriate manner. It would include purchase, rental, lease or hire purchase, including services incidental to the provision of the said goods or services or the execution of the works. Moreover, the World Bank (2010) described that public procurement is the process use by the government to buy the inputs for vital public sector investments. Those investments both in physical infrastructure and strengthen institutional and human capacities lay foundations for national development.

Accordingly public enterprises enter in to many business relationships, both upstream and downstream. However, the objectives of the public sector are wider than the procurement process of the private sector (Murray, 2009; Larson, 2009). Such objectives include the effective delivery of a wide range of public services, including law and order, health, social services, education, defence, transport, and the environment. Hence, the scope of the procurement in public sector is much wider than the scope of the private organisations in terms of the diversity and needs of customers being served (Erridge, 2007). Since, 2005 the strategic role of public procurement has emerged, further it has extended the basic cost saving function to cover the broader government objectives. Further the public procurement is subject to special rules in order to secure that goods and services are acquired at competitive prices (Zheng *et al.*, 2010).

Further, Masterman (1992), Frank (1998) and many other authors in procurement attempted to categorise the PPP in construction industry under several procurement systems. Rameezdeen and Silva (2002) categorised the PPP into four broader systems; 01) Traditional Procurement System (Measure and Pay, Lump Sum, and Prime Cost), 02) Integrated Procurement System (Design and Build/ Construction (Build Own Operate, Build Operate Transfer, Build Own Operate and Transfer) and Turnkey, etc.), 03) Management Oriented System (Construction Management and Project Management, etc.), and 04) Collaborative System (Joint Venture, Partnering, etc.).

Moreover, the construction industry has recognised as an economic regulator and plays a key role in its economy providing significant contribution to the national output (Turin, 1973; Hillebrandt, 1984; Ofori, 1990). Thus, PPP in construction industry is identified as paramount importance for economic development and long term growth of the country. Within the overall pattern of public expenditure in construction industry, the portion of public expenditure attributable to purchases of goods and services that has been the subject of significant attention of the stakeholders (Fernandez, 1996; Trionfetti, 2000; McCrudden, 2004; Brulhart and Trionfetti, 2004). Further considering with total public expenditure, this interest arises in part from the absolute scale of public procurement between 8% and 25% of the Gross Domestic Products (GDP) of developing countries and 30% purchases of goods or services developed countries (OECD, 2000; European Commission, 2006; Afonso *et al.*, 2005). Furthermore, public procurement process in construction industry is also a significant activity in the developing world (Evenett and Hoekman, 2005).

3. SIGNIFICANCE OF “PPP” IN SRI LANKAN CONSTRUCTION INDUSTRY

In the year 1977, the reigning political party took major steps to liberalise the economy in Sri Lanka. This involved several inter related initiatives to open up the economy to foreign trade and investment to

deregulate domestic business in order to reduce the role of the state in economic affairs. At present, the economy of the Sri Lanka has been shown transition features since end of the war in 2009. Therefore, the procurement systems are also in transition era (Central Bank Report, 2010; Central Bank Report, 2011). Further statistical figures of the Central Bank Report (2012) revealed that government of Sri Lanka spent on infrastructure development Rupees billion 310.3, 335 and 375.2 in the year of 2009, 2010 and 2011 respectively. Therefore public procurement process in construction industry of the country is identified as integral part in order to achieve desired aim of to be an economic hub in the Asian region. Hence, enhancement and improvement of the activities of public procurement process in construction industry directly benefitted to the nation in order to achieve the desired outcome (World Bank, 2010; Murray, 2009; Larson, 2009; Erridge, 2007; Zheng *et al.*, 2010).

Central Bank Report (2012) found that the public procurement process in construction sector was the main driver of economic growth in Sri Lanka and mentioned that it makes the most significant contribution, reflecting the massive public investment programmes and several private sector projects. Further, noted that interest of the stakeholders has growth to moderate the existing process. Moreover, PPP is concerned with establishing and documenting what is required; soliciting the offers to provide supplies or services to construct or maintain infrastructure or to undertake disposals; awarding contracts to successful tenderers; monitoring that which was contracted to be provided is indeed provided; and paying contractors for executing their contracts until end of defect liability period (Raymond, 2008; National Procurement Agency, 2006). Further, Rameezdeen and Silva (2002) mentioned that majority of the government projects in Sri Lankan construction sector carry out under the traditional procurement system of Measurer and Pay in order to ensure the transparency and accountability as per the rules and regulation specified in procurement guidelines and financial regulations when compared with other procurement systems.

However, the government investment for major projects irrespective of the procurement systems in the field of infrastructure has directly contributed to economic growth in Sri Lanka. Following the liberalization of the economy in 1977, investment was raised from 14.4% of GDP in 1977 to 33.8% in 1980, with an average of 27.6% during 1978–84 and in 2010 to 2012 the average of 30%. This was due to the ambitious public procurement process accompanying reform after the 30 years of war (Central Bank of Sri Lanka, 2012; World Bank, 2010, 2012; Murray, 2009; Zheng *et al.*, 2010; Larson, 2009). Hence, this improvement has direct positive affect to the construction industry. Accordingly, in line with the medium term development plan of the country, the vision of the Sri Lanka was established to become a global hub between the East and the West and become upper middle income country by 2016 (The Wold Bank, 2012).

Therefore, PPP in construction industry has direct link with the investments and economic development of the country. Hence, effective and efficient improvement of activities of PPP positively affected to uplift the economy of the country (Central Bank Report, 2010; Central Bank Report, 2011). Elaborating in this regard Shiyamini *et al.* (2005) emphasised that government is major client and regulator in the construction procurement in Sri Lanka. Moreover, the PPP of construction industry is identified as one of the backbones of the economy of Sri Lanka (Latham, 1994; Egan, 1998). In order to facilitate to that the public procurement process play significant role to achieve the medium term development goals of the country. Hence, the procurement process of the construction industry should be substantial and will have to be met by both the public and private sectors to optimise alignment with the vision of the medium term development plan of the country in line with the global needs (Central Bank of Sri Lanka, 2011).

Thus the procurement process should upgrade to achieve the desired goals of the organisation or country by considering the requirement of stakeholders and global needs (Srivastava, 2007; Preuss, 2009; Walker and Brammer 2009).

4. CHALLENGES AND BARRIERS FOR THE “PPP” IN CONSTRUCTION INDUSTRY

The current activities of the public procurement process in Sri Lanka carryout in line with the rules and regulations specified in the financial regulations and procurement guidelines and manuals of the government of Sri Lanka and the funding agencies. The funding agencies of the World Bank (WB), the Asian Development Bank (ADB), and the Japan International Cooperation Agency (JICA) require that borrower should ensure that procurement system is sustainable and selection procedures should base on quality and life cycle based evaluations in order to overcome the deficiencies of the existing system. However misunderstanding and misidentification of the concept of the sustainable development by the

stakeholders is the prevailing key dispute (Williams, 2007; World Bank, 2012). Further, misidentification of procurement law and negative attitude of the procurement officers are also identified as major challengers (Williams, 2007).

Raymond (2008) noted that Sri Lanka has no continuity in a national strategy on the procurement process unlike developed countries. Moreover, the author pointed out that the existing PPP in Sri Lanka not considers the global needs and requirements in line with the key principal of sustainable development. In addition lack of knowledge of the officers and fraud and corruption involvement also negatively affect to the activities of procurement process. Therefore, present PPP not compatible with the aspects of sustainable development of the country. As such, the government of Sri Lanka and the funding agencies have identified that the PPP in Sri Lanka should be upgraded to expedite the future economic development to become a one of fastest growing economy in the Asian region (World Bank, 2010; Biller and Nabi, 2013; Murray, 2009).

Though, cost has been found to be the leading barrier to improve the procurement process and lack of support by the top management as leading facilitator also identified as obstacles. There are notable differences could be seen from developed countries to Sri Lanka on uses forms of capital efficiently to sustain economic growth and development in the medium and long term. Hence, the main challenge remains to Sri Lanka is high initial cost involvement to upgrade the system in line with the global need toward better infrastructure facilities to increase economic growth in the area of construction, services and manufacturing sectors (Biller and Nabi, 2013).

Hence literature revealed that number of challenges and barriers of the PPP in construction industry as obstacles to provide the desired outcome of the stakeholders in Sri Lanka compatible with the global needs. Moreover it was identified that the interest to upgrade the PPP in construction industry has been increased by the stakeholders in line with the concept of sustainable development as per the global requirements. In the next chapter discusses remedial measures to the prevailing challengers through the comprehensive literature review.

5. REMEDIES FOR THE CHALLENGES AND BARRIERS OF “PPP” IN CONSTRUCTION INDUSTRY

Administrative remedies identified with consideration and awareness of environmental protection and social laws to address the existing challengers of the PPP as mentioned in first paragraph of the previous chapter. The law concerning on sustainable development is addresses the treatment of hazardous waste, occupational safety, and the prevention of corruption. Further funding agencies identified that country should have a strong procurement regulatory framework in place, which ensures economy and efficiency, equal opportunities to compete, and a transparent procurement process. Furthermore encourage the development of domestic industries. Moreover, the legal framework has been developed by the funding agencies base on the United Nations Commission on International Trade Law (UNCITRAL) as based legislation to include institutional checks and balances in order to reduce the corruption and dispute (Williams, 2007; World Bank, 2012).

As stated in second paragraph of the previous chapter the remedies have identified for national strategy and development framework; the country embarking on sustainable development as national strategies should have positive reactions toward the norms of inclusiveness, equity and fairness. This strategy should also address environmental, social and economic challenges of the existing PPP. The European Commission identifies the most important driving forces behind the PPP as relevant policies and the increased awareness of environmental problems (European Commission, 2007). The author further mentioned that most member countries have developed national sustainable development strategies at developing stage to implement the targets agreed to arrive the national development. Moreover the experiences of current developed countries also provide further evidence that a strong continues national sustainable development framework is pivotal for address the existing challengers of PPP (World Bank, 2010; Biller and Nabi, 2013; Murray, 2009; Raymond, 2008).

Available resources and support of top management also identified as remedy for the challengers that identified in third paragraph of the previous chapter; the implementation of the PPP as desired by the stakeholders in line with global needs requires reforms in the areas of policies and investments in

technology, research, education and information. Further adequate funding and institutional capacity also should be upgraded. The experiences of Sri Lanka have shown that existing budget was not sufficient to implement desired outcome. However on the other hand found that the country has established short terms targets to stream line the existing PPP. Accordingly the funding agencies have taken actions to analysis the existing PPP in Sri Lanka in order to upgrade and enhance the process in line with global needs. The action taken by both government and funding agencies positively affect to bridge the existing gaps of PPP in Sri Lanka (World Bank, 2010; Biller and Nabi, 2013; Murray, 2009).

Hence, majority of the literature found that sustainable development approach as best remedial measure to bridge the gap of the prevailing challenges of the PPP towards the development objectives of the country.

6. SUSTAINABLE PUBLIC PROCUREMENT PROCESS (SPPP) AND ITS SIGNIFICANCE TO CONSTRUCTION INDUSTRY

World Summit on Sustainable Development (2002) first time officially disclosed to the world the sustainable procurement as the process that promotes policies encouraging development and diffusion of environmentally sound goods and services. However the World Commission on Environment and Development's Report (1987) internationally recognised definition of sustainable as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The procurement actions in order to achieve desired outcome are same on the sustainable and existing procurement process (Interagency Procurement Working Group, 2006). Though, Steurer *et al.* (2007) and Mc Crudden (2004) argued that existing procurement process has drawn special attention on the aspects of cost, quality and time than social, environment and economic in order to achieve the value for money.

The concept of sustainable procurement introduce and promote in last few years, which can be explained in the following terms: "sustainable procurement (SP) is procurement that is consistent with the principles of sustainable development, such as ensuring a strong, healthy and just society, living within environmental limits, and promoting good governance" (Walker and Brammer, 2009 p. 21).

Steurer *et al.* (2007) emphasised that the SPP has been used by developed countries as best practice of current procurement process. Sustainable development encompasses environmental protection allied with the promotion of social welfare and economic growth. It is a principle aimed fulfils the needs of current generations by saving the required resources for future generations (D'Amico, 2010; Brauch M. D., 2012). Hence, sustainable procurement means taking sustainability considerations into account in the procurement actions. This means thinking carefully before buy, buying only what really need, purchasing products and services with high environmental performance and considering the social and economic impacts of a purchasing decision.

The SPP is about spending public funds on products, services, projects that foster sustainable development of the country. Currently, sustainability issues becoming vital in the developmental agenda of nations, it is time to shift the focus of public procurement systems from mainly immediate economic advantages to SPP systems which will result in long term benefits not just to governments but to all their constituents. Though a new concept, SPP is not another type of procurement; it rather seeks to address the environmental, social and economic consequences of procurement actions from design through manufacturing to use and final disposal at the end of defect liability period. The SPP is defined as a process whereby public institutions meet their needs for goods, services and works in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment. Finally the process upholds the principles of transparency, fairness (to both the supplier and society), long term economy, and accountability (Mueller (1997), Persson and Tabellini (2001), Shleifer and Vishny (1998), Strauch and Von Hagen (2000), Tanzi and Schuknecht (1997, 2000)).

The sustainable procurement is affected to potential saving of costs of the procured goods and services. Although it may lead to higher direct purchasing costs, the overall lifetime cost of a sustainable product less than the cost of other cheapest option. This is because the sustainable option can result in lower operating costs, maintenance and disposal costs. Thus, despite the higher initial purchasing costs, sustainable options can offer an important return on investment through reduced life cycle cost. Further, it

results in an average decrease of overall costs for public organisations of around 1% (Pricewaterhouse Coopers, 2009). This percentage is based on lifecycle cost estimation for seven European countries (United Kingdom, Sweden, Finland, Denmark, Germany, Austria and the Netherlands). A reduction of 1% is significant in absolute terms, given the large value of public procurement. The cost reduction could be larger for nations with a higher percentage of procurement of the GDP in the developing countries. Further found that especially in the construction and transport sector major cost reductions can be achieved through sustainable procurement. The government require to staidly improve the investment in the field of infrastructure (The Wold Bank, 2012). Hence, application of sustainability concerns to the current public procurement process leverage the benefits for major regional and urban infrastructure projects in construction industry.

Williams *et al.*, (2007) highlighted that the new trends in public procurement system and global need of upgrade the existing PPP in construction industry as the global population is increasing and consumption rates per capita are growing. Hence, human consumption of resources significantly exceeds what the earth can provide. Further, essential services such as clean air and water, a stable climate and viable forests and fisheries are in long term decline. The resources on which rely are being depleted at accelerating rates. Furthermore, stated that range of social, environmental and economic objectives can be delivered through the enhancement of the existing PPP.

Hence, effectiveness of the existing public procurement process in the construction industry in Sri Lanka should be upgrade by improving consideration of value for money, domestic and international confidence, and development of professionalism at all level, enhancing technology considering social and environment aspects (Raymond, 2008). Clement *et al.* (2007) emphasised that numbers of benefits have utilised by implementing sustainable procurement system than the existing procurement system to the construction industry. Elaborating in this regards further explained that benefits of implementing the SPP such as financial saving, achieve the goals of social, environment and health, drive local innovation, improve public image and increase legitimacy and contribution to the global sustainability. Accordingly, incorporate the sustainability concerns to the existing procurement process is the one of the best practicable and cost effective possible alternative solution to upgrade the existing procurement process. Moreover, Steurer *et al.*, 2007 explained that the governments should take the full range of economic, social and environmental costs and benefits of public procurement into account for the sustainable improvement of the economy.

Based on the results of findings, suggested that there are several practical implications for the government policy makers in Sri Lanka. The policy makers should focus more on “buy from small and local suppliers” as well as retain an environmental focus and address future policy iterations. Further the government should provide sufficient financial support and should introduce sustainable procurement guidelines and awareness raising programs about sustainable procurement opportunities. Finally, the assistant should be obtained from the funding agencies and developed countries in continuing to develop and refine policy responses to the sustainable procurement challenges ahead.

7. “SPPP” TO BRIDGE THE GAP OF THE EXISTING “PPP” IN SRI LANKAN CONSTRUCTION INDUSTRY

As mentioned in previous chapter, interest to the sustainable procurement system has been increased by the stakeholders in Sri Lanka. Raymond (2008) noted that poor procurement practices hinder sustainable development and shown negative impact upon economic growth of the country. The Commonwealth Procurement Guidelines (2005) and Raymond (2008) highlighted that when procuring of goods, works and services all the relevant cost and benefits over the procurement lifecycle should be taken in to account. Furthermore Barrett (2000) and Korosec and Bartle (2003) argued that existing procurement process should be streamlined consideration of issues such as client satisfaction, public interest, social and environment impacts, fair play, honesty, justice and equity. Further, the authors emphasised that developing countries need to recognise the importance of the technique and benchmark to improve the public procurement process towards the sustainable aspects. Hence, sustainability concerns are identified as the best option to address the prevailing issues of the existing procurement process in Sri Lankan construction industry (Walker and Brammer, 2009; Rameezdeen, 2002).

Further, SPPP is identified as most accepted method to address the issues and deficiencies in existing PPP of the developing countries (Interagency Procurement Working Group, 2006). Moreover the construction

industry is identified as an open system, hence, it is very sensitive to change with the needs and requirements of the stakeholders; further, its characterisation throughout the world is determined by the operating external environment, which consists of subsystems such as economic, political, financial, legal and technological. This has led the industry to be in a challenging state in addressing the changes forced by the subsystems in an efficient and effective manner. Thus, the construction industry in Sri Lanka is striving to tackle these changes through the new and innovative ways of construction, efficient resource utilisation and better organisation of projects. Consequently, PPP practiced in the construction industry has also been subjected to changes resulting in many newly innovated procurement systems that could be used to meet contemporary requirements in line with the current global needs (Turin, 1973; Hillebrandt, 1984; Ofori, 1990; Rameezdeen, 2002).

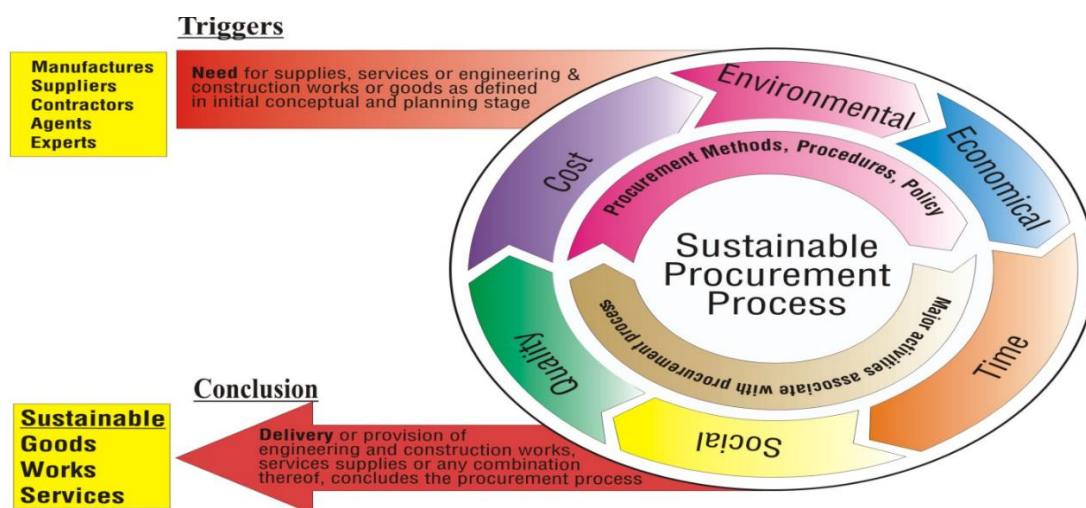


Figure 1: Sustainable Procurement Process to the Sri Lankan Construction Industry

Figure 1 illustrates procurement methods, procedures and policies link with major activities associate to the process in line with sustainable aspects. Further elaborate the triggers as input to the process and sustainable product as output. Therefore, existing PPP in construction industry in Sri Lanka should give equal weightage not only to the aspects of time, cost and quality but also to the aspects of social, environment and economical when produce the goods, works and services with consideration of value for money in line with the requirements of the stakeholders and the global needs (Interagency Procurement Working Group, 2006; Steurer *et al.* 2007; Mc Crudden 2004; Williams, 2007).

The main benefits from sustainable procurement can be summarised as: controlling costs by adopting a wider approach to whole life costs, achieving internal and external standards complying with environmental and social legislation, managing risk and reputation of the organisation creating new, vibrant markets ensuring security of sustainable supply for the future ensuring maximum community and financial benefits (Interagency Procurement Working Group, 2006).

The opinions of the experts in the field of procurement established the feasibility of the findings of literature and further mentioned that potential benefits of sustainable procurement include: long-term efficiency savings more efficient and effective use of natural resources reducing the harmful impact of pollution and waste reduction by promoting innovative products.

8. CONCLUSIONS AND THE WAY FORWARD

The aim of this paper was to identify the applicability of sustainability concerns to the PPP in Sri Lankan construction industry in order to bridge the gap of the existing PPP in line with requirement of the stakeholders and the global needs.

As mentioned previously, findings revealed that the PPP has number of challenges and barriers to improve the system. Further through the literature it was identified that SPPP as remedial measure to address the challenges and barriers of the existing PPP in Sri Lanka as per the previous experience of developed countries in line with the requirement of the stakeholders and the present global needs (The Commonwealth

Procurement Guidelines, 2005; Raymond, 2008; Walker and Brammer, 2009). Finally through the literature and the opinions of the experts in the field of procurement identified the gravity of consideration of the aspects of social, environment, and economical while carrying out the public procurement activities as a best practice in order to promote the standard of living and economy of Sri Lanka to achieve the sustainable development of the country in line with the global requirements (World Bank, 2010; Biller and Nabi, 2013; Murray, 2009; Larson, 2009).

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