

# CONCEPTUAL FRAMEWORK FOR SUSTAINABLE PUBLIC PROCUREMENT PROCESS IN CONSTRUCTION INDUSTRY

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## ABSTRACT

*Public Procurement Process (Public PP) mainly focuses on the satisfaction of stakeholders in line with development objectives of the country. The importance of public expenditures within the world economy has stimulated and established interest in how public money is spent, with an emphasis on transparency and openness through the Public PP. This was identified as critical challenges with prevailing gaps of the Public PP when focuses on Sri Lankan construction industry. In this context Sustainable Public Procurement Process (SPPP) in construction industry emerge to Sri Lanka with numbers of benefits. Though it is a new concept to the developing countries, SPPP is not another type of procurement; it rather seeks to address the environmental, social and economic consequences of procurement actions. Moreover, the developed countries have implemented the SPPP successfully as a solution to challenges and gaps of existing Public PP. Hence, the SPPP has identified as one of most accepted alternative method to address the challenges and gaps of the Public PP in Sri Lankan construction industry.*

*Thus, this paper has proposed a conceptual framework for the SPPP based on secondary data. Further paper explored the framework in line with significant stages of Conceptual, Planning, Tendering/ Purchasing, Implementation, and Closeout with due consideration to the relationship of these all five stages of the Public PP. Relevant areas scrutinised through the comprehensive literature review to develop the proposed conceptual framework. Further, experts in the field of construction procurement also consulted to gather the opinions in order to evaluate the feasibility of conceptual framework.*

**Keywords:** *Conceptual Framework; Construction Industry; Public Procurement Process; Sustainable Public Procurement Process.*

## 1. INTRODUCTION

Procurement process is adopted by not only the government entities but also the private organisations to obtain goods, works, and services by most appropriate manner Further, the World Bank (2010) described that public procurement is the process that use by the government entities 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 procurement mainly consider the stakeholder satisfaction in line with the desired objectives of the country, where, the primary objective of the procurement process in private sector is optimum benefit to the organisation together with least cost and accepted quality in line with the desired objectives of the organisation. Hence, enhancement and improvement of the activities of Public Procurement Process (Public PP) directly benefitted to the nation in order to uplift the living standard of the community. Therefore, Public PP is examined as series of activities that significant to the sustainable development of the country. The activities of the Public PP 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 (Murray, 2009; National Procurement Agency, 2006; Erridge, 2007; Larson, 2009; World Bank, 2010; Zheng *et al.*, 2010).

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Central Bank of Sri Lanka (2012) found that the Public PP in construction sector was the main driver of economic growth in Sri Lanka and it makes the most significant contribution, reflecting the massive public investment programmes and several private sector projects. Further, literature revealed that interest of the stakeholders in construction industry has growth to moderate the existing process in line with the global requirements. Moreover, 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 (Williams *et al.*, 2007; World Bank, 2010).

Thus, the construction industries in the world are striving to tackle these changes through the new and innovative ways of construction, efficient resource utilization 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. Further, sustainable procurement process concluded as integral part to achieve the present global needs and uplift the economy of the country and living standards of the stakeholders in line with the triple bottom line indicators of economic, environmental and social (World Bank, 2010; Srivastava, 2007; Preuss, 2009; Walker and Brammer 2009; Williams *et al.*, 2007).

The aim of the paper is to propose conceptual framework for Sustainable Public Procurement Process (SPPP) to the Sri Lankan construction industry through the literature and opinions of the experts in the field of procurement. Hence scope of this paper includes introduction of Public PP, Remedies to the challenges and gaps of the existing Public PP, significant of the SPPP, and conceptual framework.

## **2. PUBLIC PROCUREMENT PROCESS (PUBLIC PP) OF CONSTRUCTION INDUSTRY IN SRI LANKA**

The purchasing power of Sri Lankan public sector plays a significant role. Therefore, the Public PP has direct link with the economic development of the country. Hence, effective and efficient improvement of activities of the Public PP positively affected to uplift the economy of the country (Central Bank of Sri Lanka, 2012). Elaborating in this regard further emphasised that government is major client and regulator in the construction procurement in Sri Lanka. Furthermore, the Public PP in construction industry is identified as one of the backbones of the economy of Sri Lanka.

Therefore, the Public PP in construction industry should give equal weight age not only to the dimensions of time, cost and quality but also to the dimensions of social, environmental and economic when acquisition of 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; Mc Crudden 2004; Williams *et al.*, 2007).

The reigning political party took major steps to liberalize the economy in Sri Lanka in 1977. 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 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 of Sri Lanka, 2012). Further statistical figures of the Central Bank of Sri Lanka (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 PP in construction industry of the country is identified as integral part in order to achieve desired short term targets that to be an economic hub in the Asian region in line with the aim of sustainable development of the country. Hence, enhancement and improvement of the activities of Public PP in Sri Lankan construction industry will be directly benefitted to the nation in order to achieve the economic development of the country (World Bank, 2010; Murray, 1999; Larson, 2009; Erridge, 2007; Zheng *et al.*, 2010).

Central Bank of Sri Lanka (2012) found that the Public PP in construction sector was the main driver of economic growth in Sri Lanka. Further author mentioned that it makes the most significant contribution, reflecting the massive public investment programmes and several private sector projects. Furthermore, it was identified that Public PP of construction industry in Sri Lanka hold major share of the Gross Domestic Products (GDP) as developing country. Moreover, noted that interest of the stakeholders has

grown to moderate the existing process. Hence, contemporary version of the Public PP of the construction industry should be substantiated and will have to be met by both the public and private sectors requirement to optimum alignment with the vision of the medium term development plan of the country in line with the global needs (Central Bank of Sri Lanka, 2012). Accordingly, improvement of existing Public PP in line with the global needs and requirements has positive impacts on the sustainable development of the country.

In line with the medium term development plan, the country vision of Sri Lanka is to become a global hub between the East and the West and become upper middle income country by 2016. Towards that vision, the government development policy framework expressed the areas that should be upgraded inter alia with improvement of competition in the field of infrastructure and environment sustainability (The World Bank, 2012). Thus the procurement process should upgrade to achieve the desired goals of the organisation or country by considering the requirement of stakeholders that link with the global needs and requirements (Srivastava, 2007; Preuss, 2009; Walker and Brammer 2009).

### **3. REMEDIES TO THE PREVAILING CHALLENGES AND GAPS OF THE “PUBLIC PP” IN SRI LANKAN CONSTRUCTION INDUSTRY**

Liberalized economy of Sri Lanka has 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. Further the country has taken several initiatives to enhance and upgrade the existing Public PP in line with the global needs (Central Bank of Sri Lanka, 2012). However, the initial cost has been found as the leading barrier to improve the procurement process. Further 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). However, the funding agencies has given consent to provide financial assistance to upgrade the existing procurement system together with the capacity development of the institutions.

Further Sri Lanka has no continuity in a national strategy on the procurement process unlike developed countries (Raymond, 2008). Moreover, the author pointed out that the existing Public PP in Sri Lanka not considers the global needs and requirements of sustainable development. In addition lack of knowledge and negative attitude of the officers and fraud and corruption involvement also negatively affect to the activities of procurement process. Therefore, present Public PP not compatible with the dimensions of sustainable development of the country. As such, government of Sri Lanka and the funding agencies have identified that the Public PP in Sri Lanka should be upgraded to expedite the future economic development to become a one of fastest growing economy in the Asian region. Hence, government of Sri Lanka takes preliminary actions to identify the remedial measures to bridge the gap with the financial facilities of the funding agencies (World Bank, 2010; Biller and Nabi, 2013; Murray, 1999).

However misunderstand and misidentification of the concept of the sustainable development by the stakeholders is the prevailing key dispute (Williams *et al.*, 2007; World Bank, 2012). Further, misidentification of procurement law and negative attitude of the procurement officers are also identified as major challenges and gaps (Williams *et al.*, 2007). Accordingly, administrative remedies have been identified by the funding agencies and government with consideration and awareness of environmental protection and social laws to address the existing challenges and gaps of the Public PP.

Hence literature revealed that number of challenges and gaps of the Public PP in construction industry as obstacles to provide the desired outcome of the stakeholders in Sri Lanka compatible with the global needs and requirements. Moreover, it was identified that the interest to upgrade the Public PP in construction industry has been increased by the stakeholders in line with the concept of sustainable development as per the global needs and requirements. Hence, majority of the literature found that sustainable development approach as one of the best remedial measure to bridge the challenges and gaps of the Public PP towards the development objectives of the country with the assistance of the funding agencies (Raymond, 2008; Williams *et al.*, 2007; World Bank, 2012).

#### **4. SUSTAINABLE PUBLIC PROCUREMENT PROCESS (SPPP) IN CONSTRUCTION INDUSTRY**

Sustainability means the capacity to maintain the entity, outcome, or process over the period of time. The concept of sustainability came to public attention after the 1972 based on the report of “Limits of Growth” that issued by the international think tank Club of Rome. In 1980 the world conservation strategy developed by the International Union for Conservation of Nature, in collaboration with United Nations Environmental Programme (UNEP) and World Wildlife Foundation, worked to make sustainability as a benchmark of international action. Accordingly, 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. Further author recognised definition of sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Moreover, SPPP identified by Walker and Brammer (2009) acquire goods works and services for the organisation in line with the fulfilment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. More broadly authors emphasised that the SPPP encompass triple bottom line policy areas of economic, environmental and social.

The procurement actions in order to achieve desired outcome of the organisation and country are the same on both sustainable and existing procurement process (Interagency Procurement Working Group, 2006). Mc Crudden (2004) argued that existing procurement process has drawn special attention on the dimensions of cost, quality and time than social, environmental and economic in order to achieve the value for money. However, Williams *et al.*, (2007) highlighted that the new trends to upgrade the Public PP in construction industry have been increased by the stakeholders as the global population is increasing and consequently the consumption rates per capita are also growing. Therefore, 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, authors stated that range of social, environmental and economic objectives can be delivered through the enhancement of the existing Public PP.

Clement *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. Further authors emphasised that incorporation of sustainability concerns to the activities of the existing procurement system is one of the way to bridge the gap that identified by developed countries in line with the principles of sustainable development. The SPPP identified as most accepted method to address the issues and deficiencies in the existing Public PP (Interagency Procurement Working Group, 2006). Further, application of sustainability concerns to the current Public PP leverage the benefits for major regional and urban infrastructure projects.

Hence, the main benefits from sustainable procurement can be summarized 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).

#### **5. CONCEPTUAL FRAMEWORK TO THE SUSTAINABLE PUBLIC PROCUREMENT PROCESS IN CONSTRUCTION INDUSTRY**

The SPPP identified as one of most accepted method to address the issues and deficiencies in existing Public PP of the developing countries (Interagency Procurement Working Group, 2006). Moreover the construction industry explored as an open system, hence, which is very sensitive to change with the needs and requirements of the stakeholders; further, its characterization 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 utilization and better organisation of project activities. Consequently, activities of the Public PP in the construction industry are also subject to changes resulting in many newly innovated activities and systems in line with global requirements (Turin, 1973; Rameezdeen, 2002).

Development of the conceptual framework is a challenging roll with the identification of the previous research (McGaghie *et al.*, 2001). However, the author added that identification of the findings of the previous researches facilitate to understand the coherent set of ideas and opinions or main areas that to be considered for future studies. Accordingly the researcher found that the Office of Government Commerce (2007) defined the framework for sustainable construction procurement lifecycle since before identify the business needs up to construction management and disposals. Further the researcher explored that what should be considered in each and every stage of the procurement process of the SPPP as defined by the Office of Government Commerce (OGC). Furthermore, the author investigates that why should be considered those stages and areas in line with the framework of the OGC.

Accordingly, the researcher has opportunity to develop the study by focussing the subject areas and boundary (Miles and Huberman, 1994). Moreover, Rameezdeen (2002) described the framework for the construction procurement in line with the identified five (05) numbers of significant stages of Conceptual, Planning, Tendering/ Purchasing, Implementation, and Closeout. Further, the author added that each stage of the procurement process has significant value in order to achieve the desired outcome of the stakeholders. Hence, special attention has been drawn to the each and every stage of the procurement process with due consideration of the relationship of all the five stages. The Figure 1 illustrates the process adopted to develop the conceptual framework for this study.

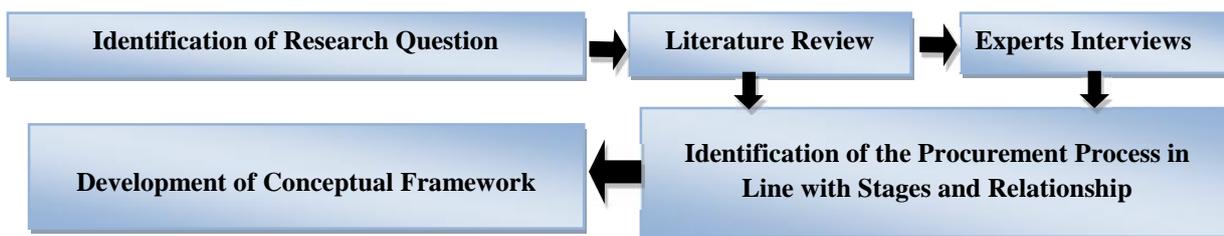


Figure 1: Procedure Followed to Develop the Conceptual Framework

Subsequently, through the critical literature and opinions of the experts identified that the SPPP as best remedial measures to the challenges and gaps to the Public PP and bridge the gaps in Sri Lankan construction industry as a developing country to achieve broader sustainable development objectives. The details of the experts who involved for the expert opinion survey are given in following Table 1.

Table 1: Selection of Experts

Field No	Selected Source of The Experts	Numbers of Experts
01	Funding Agencies (World Bank, Asian Development Bank, Japan International Cooperation Agency)	03
02	Government institutions (Ministries, Authorities, and Department)	03
03	Non-Governmental Organisation (NGO)	01
04	Private Organisations	03
<b>Total Numbers of Experts</b>		<b>10</b>

Content analysis and cognitive mapping were used to analyse the data. Then integrate the sustainability concerns to the stages of the current Public PP in order to address the gaps identified in the selected areas through the findings and the experiences of the above experts in the field of the procurement. Consequently, the framework developed to integrate the sustainability concerns to the significant stages of the Public PP. Finally, further interviews with key experts in the field of procurement were conducted to analyse feasibility, applicability, potential benefits, main incentives, and key challenges and gaps of the conceptual framework in order to calibrate the framework to the Sri Lankan context.

## 5.1. KEY FINDINGS OF THE LITERATURE AND EXPERTS INTERVIEWS

### 5.1.1. CHALLENGES AND GAPS OF THE PUBLIC PP AND REMEDIAL MEASURES

As mentioned in previous section of the paper not only there are numbers of challenges and gaps to upgrade the existing Public PP, but also there are numbers of remedial measures available for those challenges and gaps. Further, integration of the sustainability concerns to the Public PP are identified as one of practicable remedial measure to bridge the gap of the existing Public PP.

Majority of the literature revealed the challenges and gaps to the procurement process. However, lack of information is available related to the significant stages of the Public PP in Sri Lankan construction industry. Thus, the expert interviews were conducted to gather the findings to identify the relationship and significant of the stages of the Public PP in Sri Lankan construction industry. Hence, in addition to the comprehensive literature review the unstructured expert interviews were conducted with the four numbers of selected experts in the field of public procurement to gather the data and information related to the procurement process with the special attention on the significant stages of the Public PP in Sri Lankan construction industry in order to identify the conceptual framework and feasibility of the framework with attention to the identified gaps of the significant stages of the Public PP. The findings are summarised in Table 2.

Table 2: Challenges and Gaps of the Public PP

Challenges and Gaps Identified Through the Literature	Challenges and Gaps Identified through the Opinions of the Experts
<ul style="list-style-type: none"> <li>• High cost involvement.</li> </ul>	<ul style="list-style-type: none"> <li>• High cost involvement.</li> </ul>
<ul style="list-style-type: none"> <li>• Lack of support by the top management and policy makers.</li> <li>• Fraud and corruption involvement and negative attitude of the officers.</li> <li>• Misidentification of the concept of sustainable development and relevant rules and regulations in Public PP.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of commitment of the stakeholders.</li> <li>• Lack of educational qualification and professional experience of the key players in the Public PP.</li> <li>• Fraud and corruption involvement and negative attitude of the officers.</li> </ul>
<ul style="list-style-type: none"> <li>• Not continuation of national strategy.</li> </ul>	<ul style="list-style-type: none"> <li>• Not continuation of national strategy.</li> <li>• National platform not exist to coordination and promote the Public PP.</li> <li>• Poor coordination between the organisations and government.</li> </ul>

Further, through the interviews examined what is required as a prerequisite or enabling condition for sustainable public procurement in Sri Lanka as a developing country? Major emerging issues refer to the country context including the capacity needed to plan, manage, implement and account for the results of the sustainable procurement process policies and programs as well as linkages to development cooperation and generic principles of change management with due attention to the each and every stages of the Public PP. Further following remedial measures have been highlighted by the experts.

### 5.1.2. INFLUENCE OF THE PROCUREMENT GUIDELINES AND MANUALS, AND FINANCIAL RULES AND REGULATIONS AS REMEDIAL MEASURES TO THE CHALLENGES AND GAPS

The interviewees stated that at present, there is no regulatory body other than the Ministry of Public Finance for directly responsible to the procurement process of the country, procurement guidelines and manuals, and financial rules and regulations in Sri Lanka after the National Procurement Agency (NPA) had been dissolved and which absorbed to the Ministry of Public Finance. However, the procurement guidelines and manuals and financial rules and regulations of the donor funding agencies should be followed to disburse the foreign funds that granted for specific construction projects in Sri Lanka. Therefore, that will facilitate to integrate the vision and mission of the organisation in line with short term national targets. Hence, those could be considered as positive reactions towards the SPPP. In addition,

experts added that the Institute of Construction Training and Development (ICTAD) and Institute of Engineer's in Sri Lanka (IESL) play assistance role in order to facilitate to streamline the procurement activities in construction industry. Specially, the ICTAD has concern to formulation and enhancement of the documents involved for the activities and actions on construction industry. Further, the IESL has given more weight age to the experts who involves to the procurement actions in construction industry establishing the code of ethics for the officers mentioning that the Engineers shall hold paramount the health, safety and welfare of the public and proper utilization of the funds and other resources in the performance of their professional duties.

### ***5.1.3. INVOLVEMENT OF SHORT TERM TARGET OF THE GOVERNMENT OF SRI LANKA AND DONOR FUNDING AGENCIES AS REMEDIAL MEASURES TO THE CHALLENGES AND GAPS***

As per the interviewees the main concern of the Ministry of Public Finance is monitor and administer the procurement activities in order to facilitate to achieve the sustainable economic development of the country in line with the short terms economic targets and to expedite the future economic development of the country to become an economic hub and one of fastest growing economy in the Asian region towards the target of US\$ 7000 Per Capita income by 2020. Accordingly, procurement guidelines and manuals and financial rules and regulations of the developed countries and the donor funding agencies try to increase the sustainability concerns in each and every stages of the Public PP to the Sri Lankan construction industry in order to bridge the gaps and achieve the desired outcome of the stakeholders in line with the global needs.

Accordingly, through the expert interviews revealed that;

- Ministry of Public Finance is the authorised regulatory body in Sri Lanka which responsible for procurement activities in construction industry,
- The ICTAD and IESL provide assistance to streamline the procurement activities in Sri Lankan construction industry,
- Existing Public PP given more weight age to the dimensions of Time, Cost, and Quality than the dimensions of Social, Environmental, and Economic,
- Main Challenges and gaps to upgrade the procurement process are high cost involvement, lack of knowledge and experience, and not follow the national strategy,
- Donor funding agencies willing to grant technical and financial assistance to upgrade the existing Public PP in order to achieve the requirement of the stakeholders in line with the global needs.

### ***5.2. CONCEPTUAL METHOD FOR SUSTAINABLE PUBLIC PROCUREMENT PROCESS (SPPP)***

Thus, as a revealed through the opinions of the experts, a generic model to mainstream the SPPP is presented. The model is based on a root cause analysis on identified challenges and gaps of the stages of Concept/ Initiation, Planning, Tendering (Purchasing), Implementation, and Closeout in the procurement process. Further, the experts pointed out that the assessment and prioritization of the suitability dimension shall be given in line with the identified challenges and gaps to achieve the stated objectives on each and every stage of the Public PP. The model focuses on mainstreaming issues at the national and the organisational level. Moreover the experts pointed out the major recommendation on the objectives and management approaches at the national level such as comprise awareness rising, the development of agreed set of sustainable procurement process benchmarks, strategic planning and implementation processes that are adapted to the country situation as well as global needs in line with the requirements of the stakeholders.

The recommended actions by the experts aiming at establishing a national SPPP framework are further broken down to the organisational level or the level of the individual procuring entity. The proposed actions at this level focus on the design and implementation of a strategy to embed sustainable public procurement in daily procurement practices. The SPPP is the core of this analysis as illustrate in Figure 2.

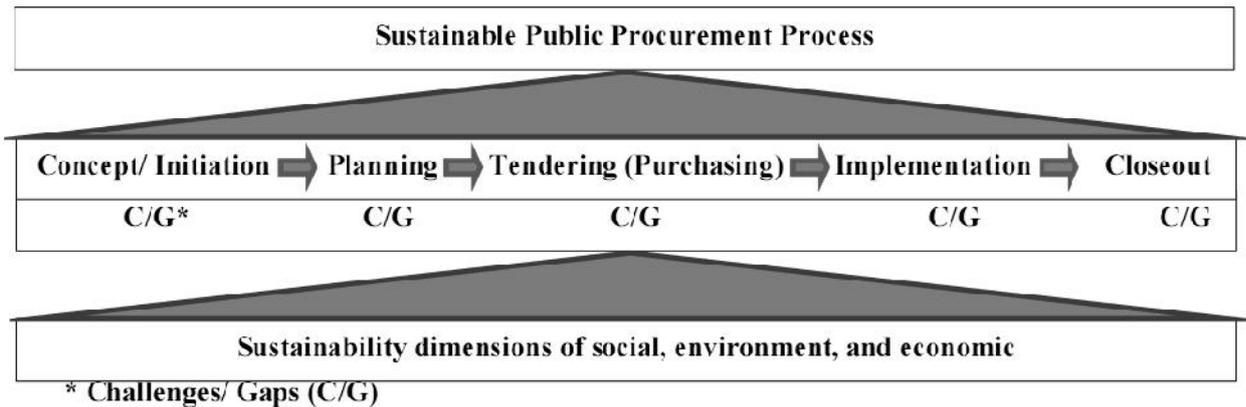


Figure 2: Sustainable Procurement Process to the Sri Lankan Construction Industry

### 5.2.1. CONCEPT STAGE

The activities of the procurement lifecycle are identified and initiated by the Procuring Entities (PE) in this stage. At this stage the PE is established and employed staff to carry out the procurement activities. Accordingly, the PE takes action to define objectives, scope, purpose and deliverables of the procurement process. However, the experts in the view that high cost involvement, lack of commitment of the stakeholders, lack of educational qualification and professional experience of the officers in the Public PP, and vision and mission of the organisation not link with the national strategy are the significant challenges and gaps available in this stage. Further, experts added that Sri Lankan national policy depends on short term political targets. Moreover experts noted that these challenges and gaps negatively affect to deliverables of the procurement process. Hence, at this stage the framework is focused to integrate sustainability concerns to these identified challenges and gaps of the activities of the initial stage of the procurement process. The remedial measures noted by the experts summarised as; formulate the independent national platform to streamline the activities in Public PP in line with the global needs to monitor and control the procurement activities, the vision and mission of the organisations shall be established in line with national strategy, establish International Organisation for Standardization (ISO) for the Sri Lankan context for the elements of social, environmental, and economic (ISO 14000 for Environment management system), change the mind-set of the stakeholders towards sustainable development, and design should be focused on principles of sustainable development.

### 5.2.2. PLANNING STAGE

This stage involves create set of plans to guide the procurement activities. The procurement plan will facilitate to the PE to ensure to procure the right quality products at the right time under the least cost. The procurement plan defines the requirement of the PE, identify all the items that need to be procured and create sound financial justification for financial allocation. Though, the experts identified that Sri Lanka doesn't exists firm development plan in link with the sustainable development of the country in line with global needs. Further, vision and mission of the organisations link with short term political target and not link with sustainable development of the country are also identified as challenges and gaps in this stage. Moreover experts added that lack of educational and professional qualification and experience of the officers are also the prevailing challenges. Hence, in the planning stage attention is given to improve and enhance the sustainability concerns as remedial measures to these identified challenges and gaps of the activities of the procurement process by developing research and development in sustainable construction, enhancing education and awareness on sustainable development, and linking the vision and mission of the organisation towards national strategy.

### 5.2.3. TENDERING (PURCHASING) STAGE

All the procurement action leads to select the best supplier, contractor, and consultant at the right time with the optimum cost to the PE in this stage. Preparation of bidding/ tendering document, invitation of

bids, evaluation of bids, selection of lowest evaluated substantial responsive bidder to award the contract are the main activities of the tendering stage. Further, the procurement officers try to identify, monitor and control the relationship with the supplier, contractor, and consultant as per the rules and regulation specified in the procurement guideline and manuals. However, the experts pointed out that lack of knowledge, negative attitude, and fraud and corruption involvement are the main challenges and gaps available in this stage in addition to the high cost involvement. Hence, main attention is given to build the knowledge of the officers and relationship with the stakeholders in line with the aspects of the sustainable development and build the continue relationship with the previous actions from the conceptual and planning stage as remedial measures to the challenges and gaps of this stage. Further, experts pointed out that ISO should be considered as evaluation criteria of the bids, more weight age shall be given to the sustainable construction methodology while changing attitude of the stakeholders.

#### **5.2.4. IMPLEMENTATION STAGE**

This stage identified as longest stage of the procurement lifecycle that deliver the physical output of the procurement process. The range of management and monitoring techniques are used in this stage to manage and control the time, cost, quality, change, risk, issues, and communications. The procurement management review is carried out at the end of the implementation stage in order to ensure the deliverables. Further the milestone indicators of goods, works, and services are identified as scheduled at the end of the stage to ensure the successfulness of next stage. However, the experts noted that misunderstand and misidentification of the concept of sustainable development and procurement law of the officers are the significant challenges and gaps available in this stage. Hence, the actions are taken to observe and monitor the activities of the procurement process to link the sustainable development in line with global needs and enhance the knowledge of the stakeholders as a remedy to the available challenges and gaps such as; delegate the responsibility to the independent national platform to monitor and control implementation activities and upgrade the law of the country and rules and regulation related to the Public PP in line with the requirements of SPPP.

#### **5.2.5. CLOSEOUT STAGE**

The procurement documents are prepared in this stage guide to close the activities of the procurement process. Further the procurement actions are described that the objectives have been met and the deliverable handed over to the end-user. Therefore, the officers of procurement should ensure the all the actions of the procurement process are completed as per the contract agreement. Accordingly in this stage the post implementation actions are implemented to determine the success of the procurement activities and identify the lessons learned after the procurement actions have been closed. Though, the experts added major gaps of lack of knowledge and negative attitude of the officers should be addressed. Hence the experts proposed awareness, inspection and evaluation of the procurement actions on the sustainable dimensions of social, environmental, economics have been carried out in order to ensure the targeted outcome achieve or not as a remedy to the prevailing challenges and gaps.

Accordingly, the above Figure 2 illustrates conceptual framework for the SPPP considering stages of the Public PP that associate with sustainability aspects. Further try to build up the relationship between the stages of Public PP and try to figure out the relationship between the relevant stages and sustainability aspects. However the output of sustainable products can be identified as a result of involvement of the dimensions of economic, social, and environmental to the procurement process.

Therefore, existing Public PP in construction industry in Sri Lanka should give equal weight age not only to the dimensions of time, cost and quality but also to the dimensions of social, environmental and economical when acquisition of 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; Mc Crudden 2004; Williams *et al.*, 2007). Further experts pointed out that this is not new concepts however given equal weight to the all the dimensions of the Public PP. Finally the opinions of the experts in the field of procurement established the feasibility of the conceptual framework of sustainable procurement for construction industry.

## 6. CONCLUSION AND WAY FORWARD

The aim of this paper was to propose conceptual framework for sustainable procurement process for the construction industry in order to bridge the gaps of the existing Public PP in line with requirement of the stakeholders and the global needs.

As mentioned previously findings revealed that the Public PP has number of challenges and gaps to improve the system. Further through the literature it was identified that the SPPP as one of practicable remedial measure to address the challenges and gaps of the existing Public PP in Sri Lanka as per the previous experience of developed countries in line with the requirement of the stakeholders and the present global needs (Raymond, 2008; Walker and Brammer, 2009). Hence through the literature and the opinions of the experts in the field of procurement identified the conceptual framework for sustainable procurement process for construction industry with consideration of the dimension of social, environmental, and economic while carrying out the public procurement activities as a best practice in order to enhance the standard of living and economy of Sri Lanka. Further sustainable actions assist to expedite the achievement of short terms targets of the organisation and country in order to facilitate to achieve the sustainable development in line with the global needs and requirements (World Bank, 2010; Biller and Nabi, 2013; Murray, 2009; Larson, 2009).

This study limited to develop the conceptual framework for the SPPP to the Sri Lankan context. Accordingly, following recommendations are offered to the academic researchers to carry out and prioritise further researches;

- Implementation of proposed framework in local and national level.
- Applying proposed framework for the different industries other than the construction.
- Conduct in-depth analysis on each and every action of the significant stages of the Public PP in order to deliver the optimum output.

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