

# **Impact of Sustainable Procurement on Post Disaster Reconstruction**

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## **Overview**

Implanting sustainability within post disaster reconstruction supply chains is very important in achieving sustainable development. Encouraging transparency in supply chain and improving procurement strategies in relation to sustainable factors (environmental, social and economic) if the issues created by natural or artificial disaster is not addressed through sustainable reconstruction process or policy. This will have a much greater impact on the supply chain which may present main economic and environmental risks to the community and the nation at large, with the right procurement approach in place, important sustainable development will emerge. Sustainable procurement is an evolutionary thing that required introducing new innovative ideas into the way we procure our building and services. Many ideas and initiatives have come to play Dexter et al (2009). For example the LEEDS in US and BREEM in UK for measuring and standardising operational carbon emission.

Despite all the research work put in place by academia and industrial professionals in achieving sustainable procurement of goods and services in post reconstruction, it does not have the necessary impact on the community social situation but only reinvigorate other sustainable issues such as land degradation (Nazara & Resosudarmo, 2007), environmental conservation (O'Brien et al., 2008, Roseberry, 2008) and economic dislocation (Jayasuriya & McCawley, 2008). In quest of completing reconstruction on time and rescue the community back to their normal life, this will affect other element of iron triangle (time, cost & quality) as a result of competition for scarce construction material and resources including but not limited to timber (Zuo, Potangaroa, Wilkinson, & Rotimi, 2009), bricks (UNDP, 2006), cement (ADB, 2007) and labour (Pathiraja & Tombesi, 2009), which will inevitably affect cost (Nazara and Resosudarmo, 2007, Steinberg, 2007) and quality (Jayasuriya et al., 2005, Kennedy et al., 2008) including time in sorting out alternative supply (Dercon, 2007, Zuo et al., 2009). All this together with poor workmanship and inadequate quality control measure in place will result in defects and eventual project failure, to huge extent damage the significant of attaining a sustainable procurement measure in post disaster reconstruction.

Lyons, (2009) conclude that Post disaster reconstruction often fails in its stated objectives, 50% at the World Bank rate and worse off in reconstruction project in Africa, was over 50% (Ika et al. 2012). With the increase in natural disasters around the globe, it is crucial that all stakeholders and international communities involved in disaster reconstruction can learn all the intricacy enshrine in the various project they have involved with in the past (Karunasena & Rameezdeen 2010; Kumaran & Negi 2006).

The increasing in world population, urbanisation and migration will increase the population density in the city making more people vulnerable to disasters due to the effect of climate change resulting in high impact on natural disaster (Mainka and McNeely, 2011). The rate and severity of disasters will continue unabated and the demand for post-disaster reconstruction will need to be intensified. Recovery is the least studied among the stages of a disaster Management and few research into impact of incorporating sustainable procurement into post disaster reconstruction (Dash and Zhang, 2007). Many stakeholders do not consider sustainable procurement of goods and services during recovery and reconstruction, where been consider they always run into logical, organisational and structural

issues (Daniel, 2014). Researcher has spent their time researching on sustainability, supply chain and procurement to develop a strategy or process in achieving sustainable procurement best practice, which is important in any post disaster reconstruction. All this effort has been implode, making it difficult to achieve a meaningful approach during this period, what the community and other stakeholder will be looking at, is a quick fix method or cost cutting measure without any consideration for the environment. Hence, this paper will consider the impact of sustainable procurement will have on post disaster reconstruction, bringing out the effect for all the stakeholder to understand the significant of implementing a sustainable procurement policy during any post disaster reconstruction.

### **Sustainable Procurement Impact**

The urgency of post disaster reconstruction is an inherent challenge for the community in term of the need and desire to rebuild speedily, safely and equitably (Kates et al., 2007; Nelson, Ehrenfeucht and Laska, 2007; Olshansky, 2006). Time is of the essence to drive the economic recovery by creating opportunity for the community (Olshansky, 2006), and the resettlement must be timely otherwise the community might take it upon themselves to start building in protected or unsafe area (Permanent Preservation Area APP) which can inbreed vulnerabilities of the community on same situation as before (Nelson, Ehrenfeucht and Laska, 2007; Olshansky, 2006). The logistic behind post disaster reconstruction is convoluted (Zuo et al., 2008). This in conjunction with lack of adequate supply chain for materials and labours with quick demand for reconstruction will affect cost and jeopardised the application of sustainable procurement resulting in vulnerability to future disaster.

Adopting sustainable procurement in post disaster reconstruction will embolden sustainable development and disaster resilience of the concerns community. Any post disaster reconstruction that does not complied with sustainable procurement strategy will exacerbate future disaster and reducing sustainable benefit, using sustainable procurement method will help to achieved the goals associated with ‘building back better’ and ‘building back safer’ (Berke and Beatley, 1997; Kennedy et al., 2008; Smith and Wenger, 2007). Natural disaster is described as a triggering factor build on existing social, economic and environmental issues which increases sustainable trends. In many part of the world, sustainability issues has left many community highly vulnerable to nature disaster (Aquilino, 2011; O’Brien et al., 2006; van Breda and Laprade, 2008; Roseberry, 2008). The loss associated with this are greater in developing world compare to developed countries. Hence, the need to concentrate on sustainable procurement process during post disaster reconstruction since it emphasis on continuing community resilience, in order to “build back better and safer”, and promote a culture of prevention’ (Guarnacci, 2012).

### **Method**

The current research builds on past definitions of sustainable development and applies an adjusted definition of sustainable procurement created specifically for the post-disaster context: *Sustainable Procurement during post-disaster activities is a process where services/resources are acquired/provided through best value for money for the affected citizens whilst generating economic and social benefit without undue disadvantages to natural environment.*

This research, however, did not ponder on the analogy of sustainability; but base on the principles of Sustainable procurement, such as minimising total wastage and environmental degradation.

This study aims to address gaps in the existing knowledge of sustainable procurement on post-disaster reconstruction by examine the impact in a post-disaster setting. The research is focused on using an unsustainable procurement means on post disaster reconstruction that can impede long term recovery, create new risks or exacerbate old ones, such as increased vulnerability to flood and coastal disaster.

The research examined London 2012 Olympic Games and Paralympic Games sustainable procurement practice and how it can be a best practice for post disaster reconstruction. They have

employed sustainable procurement process as an important tools in delivering the Games throughout the major stages in the development of the project, which stage from planning and construction, staging the Games and realising the legacy with the overall aims of achieving healthy living, inclusion, waste management, climate change and biodiversity and ecology. The primary data collection consisted of semi-structured interviews with informal stakeholders and direct observation during field visits to disaster affected areas in Brazil in July 2018.

## **Findings**

This analysis is based on a case study of London 2012 Olympic Games and Paralympic Games, which will provide us the practical basis of sustainable procurement. Interview with informal stakeholders during site visits to Brazil with community affected with flood and coastal disaster will be used in analysis to fashion out the benefit or impact of sustainable procurement will have in redeveloping the community.

The adoption or acceptance of sustainable procurement on post disaster reconstruction over the conventional process will depend on impetus and ability of both formal and informal stakeholders in dealing with issues surrounding awareness and priority during this volatile period when the community concern were shelters for temporary housing and security against health and safety of all and sundries, instead of combining sustainable procurement of goods and services with programming. Some of the barriers deduced from the research include but not limited to: Alleged trade-off between iron triangle (cost, time, quality) and sustainable factors (social, economic, environment), also more unsustainable ideology are more acceptable during planning because the stakeholder wanted to recover their community on time with limited resources without paying attention to quality guarantee.

## **Conclusion**

Sustainable procurement comes with an inherent benefit which the supply chain must manage together with other procurement and sustainability legislation without infringing on stakeholders requirement while maintaining a balance legislation and client pressure in quick redevelopment. The UK has an established legislation and regulatory framework in place for sustainable development which deal with energy and climate change, act as drivers for sustainable procurement process. In Brazil or any other country prone to disasters should be encouraged to implement sustainable procurement strategy during post disaster reconstruction and where no tangible legislation in place to act as a guide in the implementation process and this should be enacted by the government for the full benefit to be reap.

It is necessary to shift focus from responses and recovery to sustainable procurement. In order for this to happen, this paper suggests sustainable procurement on post disaster reconstruction over the conventional process. This approach must be supported by necessary legislation and framework.

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