

Management of Sustainability Activities in Projects: The Perspective of Project Managers

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Abstract

Managing project sustainability is becoming important in the last two decades. An increasing number of projects have built in sustainability considerations into project design and implementation. For instance, the “Equator Principles” as adopted by the Equator Principles Financial Institutions (EPFI) since 2003 have urged projects seeking project financing to meet the requirements of determining, assessing and managing social and environmental risks on top of economic analysis. Recent research findings show that lack of sustainability knowledge for project managers is a key barrier to drive projects contributing towards a sustainable society. This paper reports the results of a judgmental survey on project managers with 101 completed questionnaires. Four key messages are identified: 1) 61.4% of project managers are of the opinion that integration of economic, environmental and social criteria into project development would have either significant or critical impacts on project success; 2) they rank the relative importance of sustainability impacts in the order of economic; environmental and social; 3) 59.5% of project managers do not agree that care of project sustainability activities are the responsibility of sustainability managers (professional specialized in sustainability activities). In other words, project managers should be accountable for the sustainability activities in projects; and 4) project managers amounting to 74.2% of the sample agree that sustainability as essential knowledge area shall be included in the published guidebook of project management body of knowledge. This paper contributes to understanding project manager accountability in managing project sustainability activities and the significance of such sustainability impacts on project success.

Keywords: project, project management, project management success, project success, project manager, project sustainability, sustainable development, economic sustainability, environmental sustainability, social sustainability

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Introduction

Project management being an evolving academic discipline and professional practice is continuously developing in response to the needs of society (Bredillet, 2006, 2007a, 2007b, 2007c, 2008; Kloppenborg & Opfer, 2002; Kwak & Anbari, 2008; Shenhar & Dvir, 2004). Project exists in a relatively turbulent environment and change is the purpose of the project itself with uncertainty being inherent into the objectives of that project. As defined in the PMBoK Guide (A Guide to the Project Management Body of Knowledge) (4th edition), project is “*a temporary endeavor undertaken to create a unique product, service, or result*”. PMBoK Guide published by the Project Management Institute (PMI) in the United States recognizes “... *Projects can also have social, economic, and environmental impacts that far outlast the projects themselves*” (PMI, 2008). Munier (2005, p.21) in his book “*Introduction to Sustainability: Road to a Better Future*” mentions that “*Sustainability as a process often involves making an analysis to determine the best course of action when several projects, plans, programs, and options are considered*” (Munier, 2005). The Association for Project Management (APM) in the UK supports sustainability. In the “*APM Supports Sustainability Outlooks*” (APM, 2006), they recognize that many people involved in projects and programmes have the ability and capacity to be involved and influence at personnel, corporate, government and project level. Projects and sustainability are intertwined to serve a higher purpose towards a sustainable society that Brundtland Report (Brundtland, 1987) urges. Since project management is becoming a common way of managing business (Bredillet, 2000; Turner, 2009), the awareness of project manager and his/her team members to meeting the challenges of sustainability in project delivery would have made contributions to mankind.

The meaning of project success has also been changing from focusing on time, cost and quality (‘Iron Triangle’ by Dr. Martin Barnes in 1969) in early development stage of modern project management to recently having a framework to assess efficiency; impact on customer; impact on team, business and direct success; and preparation for future (Shenhar & Dvir, 2007). Literature review shows that sustainability whether taken as externality or interaction to project development basically made little influence on historical development of modern project management until the 1990s. Daniel (1961), as a pioneer researcher working on success factor for business, describes the necessity to collect environmental information to satisfy management information gap which includes social, political, and economic aspects of the climate in which a business operates or may operate in the future (Daniel, 1961). About forty years after Daniel’s (1961) recommendation, Belassi and Tukel (1996) and Atkinson (1999) have brought in project externality considerations into their framework for systematically assessing the success/failure of a project. Belassi et al. (1996) consider political environment, economical environment, social environment and technological environment as part of the external environmental factor group. These external environmental factors affect the implementation of project leading to success/failure (Belassi & Tukel, 1996). Atkinson (1999) in “*The Square Route*” model (see Figure 1 and Table 1) recognizes the importance of considering social and environmental impacts; as well as economic impact to surrounding stakeholder community towards establishing success criteria for project management success (Atkinson, 1999).

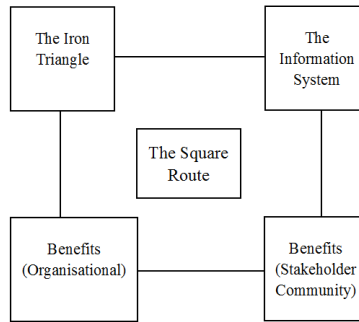


Figure 1 Atkinson's Square Route (Atkinson, 1999)

Table 1 Square Route to understanding success criteria (Atkinson, 1999)

Iron Triangle	The Information System	Benefits (Organisation)	Benefits (Stakeholder Community)
Cost;	Maintainability;	Improved efficiency;	Satisfied users;
Quality;	Reliability;	Improved effectiveness;	Social and environmental impact;
Time.	Validity;	Increased profits;	Personal development;
	Information - quality;	Strategic goals;	Professional learning;
	Use.	Organisational-learning;	Contractors profits;
		Reduced waste.	Capital suppliers;
			Content project team;
			Economic impact to surrounding community.

Collins and Baccarini (2004) in a survey of 150 Australian project managers on the subject of project success criteria indicates that twenty-three (23) criteria are identified important to product success and project management success in the Baccarini suggested Logical Framework Method (LFM) to project success (Baccarini, 1999). As expected, time (84.7%), cost (78.0%) and quality/meeting specification (55.3%) are most recognized by project managers as criteria for project management success. However, two sustainability related criteria are suggested by respondents in the study. They are "Community Acceptance" (5.3%) – a criterion important to product success about meeting the social objectives, standards and expectations of the community; and "Environmental" (3.3%) – a criterion important to project management success about meeting environmental obligations and regulatory compliance. Although these criteria rank the bottom in the list of project success criteria, they have confirmed Atkinson's (1999) thinking in an empirical manner (Collins & Baccarini, 2004). The above links project management to sustainability. Belassi et al. (1996), Atkinson (1999) and Collins et al. (2004), etc. become supporters to considering sustainability as requirements in project development and project management success.

In the sections below, system perspective of managing project sustainability and sustainability competence of project managers are discussed. These two elements constitute critical ingredients in managing projects sustainably. To understand how project management community views the criticality of sustainability in project management, a web based survey targeting on industry practitioners was conducted. It serves to explore the views of project managers about 1) degree of importance on integration of sustainability related criteria (economic, environmental, social) as part of project success requirements; 2) rank the relative importance of each sustainability aspect on project success under the three pillars approach; 3) project managers' view on management accountability; and 4) inclusion of sustainability as essential knowledge area in the guide book of project management body of knowledge. Based on 101 samples obtained from judgmental sampling, this paper contributes to better understanding about sustainability issues from project manager's perspective. Based on the result of this survey, further study on factors of respective sustainability dimension leading to project management success is recommended.

System perspective of managing project sustainability

Morgese (2014) distinguishes sustainable projects into three (3) categories by their different levels of sustainability, namely: 1) projects that are sustainable because of their own nature (e.g. wind farm project); 2) projects that create sustainable products, results, or services (e.g. building a solar panel production line); and 3) projects that are managed sustainably (e.g. building a coal fired power station with down to earth sustainability considerations) (Morgese, 2014). Whatever the category that a sustainable project falls, balancing the system of economic sustainability, environmental sustainability and social sustainability in the project management process remains important. The Shen, Tam, Tam and Ji (2010) study shows that incorporation of sustainable development principles in conducting project feasibility study (an important stage governing the success of a project) is not effectively understood by project stakeholders. Research results suggest that economic performance is given the most concern in the current project practice, whilst less attention is given to environmental and social performance (Shen, Tam, Tam, & Ji, 2010). Understanding sustainability from a system perspective helps project managers in decision making.

The concept of sustainability can be viewed as a system or a particular system state where the system's inputs and outputs remain sufficiently balanced over time to avoid system collapse or disruptive change (Peattie, 2011). By analogy to students learning physics in their experiment class testing electricity relationship of voltage (V) and current (I) (Ohm's Law: $I = V/R$) in an electric circuit consisting of resistor (R), students would find that there is a linear relationship between voltage and current in a linear electric circuit up till a state where linear relationship is becoming non-linear and eventually the resistor is burnt. It happens when the resistor is operating at a state beyond its limit. It is no longer to sustain with increased pressure (voltage applied). In other words, a system can only be sustainable within its limit. A system can be vulnerable and be destroyed fast, for example, a giant corporation (Enron) can be collapsed within a short period of time. Maintaining system sustainability whether it is a physical or social system needs to understand its inherent architecture.

Sustainability is about integrating economic, environmental and social aspects. It is about integrating short term and long term aspects; and about consuming the income and not the capital (Dyllick & Hockerts, 2002). The integration of both social and natural (or physical) systems as a whole is important to understand key sustainability issues. The notion of a system incorporates a number of components that interrelate with each other. The components can be grouped together to be understood as a whole and in terms of how that whole interacts with its neighborhood environment. For a sustainable system, the relationships among its components must be sustainable and the relationship between the system and its environment must not be destabilizing (Peattie, 2011). Project manager is a key member in the team for project design, planning, executing, monitor and control. Their views and understanding of the concept of sustainability and their attitudes towards managing project would greatly impact on project success sustainably. Integrating the concept of sustainability in project management would stretch the “system boundaries” of project management (Silvius & Schipper, 2010).

Having discussed with some project managers about barriers to managing project sustainability in a recent study, some of them reflect that barriers are related to mentality of project managers and sponsors, etc. For example, one responds that *“to me, sustainability is the responsibility of the sponsor and customer, not the project manager nor a sustainability expert.”* Another mention about economic benefits: *“there is a growing awareness of Sustainability but the project sponsor will only consider these issues if there is increase in ROI (Return on Investment). The only factor that mitigates the above is where the sponsor wishes to show his 'green' credentials and is not concerned with ROI. This usually happens where the project is 'iconic' and a 'statement' is being made either with government sanction or on a personal level by the sponsor/ owner”.*

In the same study, I have identified several major hurdles in project sustainability system. Not surprisingly, “lack of sustainability knowledge and expertise” ranks top barrier. It is followed by two barriers having the same votes each on “lack of interest from project sponsor/investor” and “managers’ mindsets”. The barrier of “lack of interest from customers” ranks third in the study. There are other barriers such as “organizational culture”, “absence of appropriate tools and processes (e.g. guidelines)” and “government regulatory support”. The study shows that barriers to managing project sustainability do exist. It is necessary to strengthen knowledge of sustainability (top barrier) to project managers and sponsors. Some project managers do not find themselves involved in building a sustainable society through their contributions in project development. Others still think that project economic benefit is more significant than other benefits such as environmental or social (Shen, Tam, Tam & Ji, 2010). Their chosen views reflect the fact that enhancement of sustainability competence for project managers is required.

Sustainability competence of project manager

When it comes to project management, it is the people that matter (Lechler, 1998) because the people side of success factor is woven into their very fabric (Cooke-Davies, 2002). Lock raises concern about sustainability of humankind (Lock, 2007). He is well aware that project managers need to face the kind of challenges like climate change and lack of fossil fuel in the days to come and that *“We shall need*

effective project managers to deal with these challenges if humankind is to survive” (Lock, 2007). Project managers are becoming part of the solution to human survival or sustainable development. Morris (1997) points out ‘knowledge and awareness of project environment’ being one of the principal competency requirements of a project manager (Morris, 1997). However, Turner and Müller (2005), after reviewing the contributions of project manager's competence and leadership style on project success, have concluded that *“the literature has largely ignored the impact of the project manager, and his/her leadership style and competence, on project success”* (Turner & Müller, 2005). Previous studies on the people issues of project management impacting on project success are mostly linked to leadership (Müller & Turner, 2007; Turner, 2007; Turner & Müller, 2006), intrinsic and extrinsic rewards (Mahaney & Lederer, 2006), cultural impacts (Henrie & Sousa-Poza, 2005), and project manager competence (Crawford, 2000), etc.

Nonetheless, Mui and Sankaran (2004) opine that sustainability development (e.g. urban renewal project) requires project managers to adopt a holistic perspective and a cradle-to-grave approach in managing projects. Mui et al. identify that current project management body of knowledge ignores the professional knowledge on sustainability issues and the suitability of generalizing specialist (project manager) or specializing generalist (sustainability manager) in the role of project leader. Mui et al. suggest to include such essential knowledge area into project management body of knowledge and put emphasis on the importance of a multi-disciplinary and integrated approach (Mui & Sankaran, 2004). In their research on an urban renewal project, Mui et al. suggest that *“individuals who are generalizing specialists – who have appropriate technical and management skills, a system approach perspective, and an ability to create an open culture in teams – are the preferred choice to serve as team leaders”* (Mui et al., 2004, p.31). Project manager needs to identify sustainability impacts due to the project, develop mitigation plan within the project life cycle process to which project manager makes a balance or even trade-off on chosen solutions with a target to maximize overall positive sustainability effects.

Since project sustainability impact is context dependent, project managers working on nuclear power station, for instance, choose to focus on certain sustainability competence requirements that others project managers (e.g. new product development project) may choose to develop a different set of competence requirements. However, the basic needs of a sound environment, a just society and a healthy economy (Brundtland, 1987; Diesendorf, 2000) towards building a sustainable society by way of project development are the same. These basic needs drive project managers in identifying sustainability requirements during project reviews and that project managers exercise their sustainability competence in promoting positive impacts and minimizing negative impacts overall whether adopting pillars approach (Zainul Abidin, 2005) or core generic criteria (Gibson, 2006) for assessing sustainability. Project managers make reference to previous project experience including the nature of project and its context (sector specific) to identify appropriate potential sustainability impacts for review (Tam, 2013).

Unfortunately, sustainability knowledge area (economic, environmental and social) as part of project manager competence requirement is not clearly established. The views of project management community about criticality of sustainability impacts on project success have not been fully understood. Although the Equator Principles

Financial Institutions in the project finance sector have urged projects seeking project financing to meet the requirements of determining, assessing and managing social and environmental risks on top of economic analysis since 2003 (EPFI, 2013), the lack of research and discussion within project management community about sustainability has caused a gap in knowledge creation and dissemination. To bridge the knowledge gap, a web based survey on project managers was conducted.

Survey on managing project sustainability

In this survey study, population refers to project managers in the project management community worldwide. Project manager is used as an all-encompassing term to describe the role of those managers that are tasked with managing project team and such person may be addressed by a different title depending on the structure of their organization. Other respondents whom are member of project team without taking the project manager role are taken as project participants with their responses discounted in the study. Exact population of project managers in the community is not known and that it is impossible to identify a complete list. A systematic or probabilistic sample for generalization of findings cannot be processed. Less desirable process is a non-probabilistic sampling (or judgmental sampling), in which respondents are chosen based on their convenience and availability. The non-probability samples serve the purpose of understanding what respondents are thinking (Czaja & Blair, 2005) which is useful for subsequent studies (a follow up pilot study was conducted to test the correlation of environmental sustainability criteria leading to project environmental success). In this cross-sectional exploratory study, non-probabilistic judgmental sampling is adopted.

As infrastructure and other large scale projects are seen to have larger sustainability impacts, it is naturally to identify and compare the opinions of project managers who are working on great sustainability impact projects against others in this survey. To this end, it is necessary to exercise judgment in gaining sufficient responses (purposive without quota) from project managers who are managing infrastructure or large scale projects. Based on direct and indirect contacts in the project management community (e.g. some contacts in the Project Management Institute, IPMA International Expert Seminar 2010 – Survival and Sustainability, etc.) and engineering institution (e.g. The Institution of Engineering and Technology, UK, etc.), 957 practitioners from the contact list were invited to participate into the survey. Web-based survey tool was adopted to facilitate data collection. One hundred and one (101) respondents from 26 countries and regions form the samples (see Table 2 below). The response rate is 10.55%. We have a full picture about where the respondents are based. Majority respondents are coming from the U.K. and Hong Kong. Male project managers (94) represent majority (93.1%) of the respondents and 52.5% of survey participants hold professional project management qualifications, such as PMP, PRINCE2 and IPMA – A, B, C or D levels. There are 79 project managers who are having more than 10 years' experience in managing projects which represents 78.2% of the samples.

Table 2 Country of respondents based

Country (# of Respondents)				
Angola (1)	France (5)	Italy (2)	Oman (1)	UK (29)
Australia (3)	Germany (3)	Japan (1)	Spain (1)	USA (9)
Bahrain (1)	Hong Kong (13)	Kuwait (1)	Suriname (1)	
Brazil (1)	Iceland (1)	Netherlands (5)	Sweden (1)	
Canada (2)	India (1)	Nigeria (3)	Switzerland (2)	
China (8)	Ireland (3)	Norway (2)	Thailand (1)	

Results and discussion

Using a five-point Likert Scale (1 = No Impact, 2 = Little Impact, 3 = Some Impact, 4 = Significant Impact, 5 = Critical Impact), respondents were asked about the degree of impact on project success by integrating economic, environmental and social sustainability criteria into project development. Table 3 shows the results. There are 62 project managers (61.4%) of the opinion that these sustainability criteria would have made either significant or critical impacts on project success. Average rating of the responses is 3.62, which means that, in general, respondents concern about the performance of sustainability requirements in delivering project results. It echoes to Belassi et al. (1996), Atkinson (1999) and Collins et al. (2004) that sustainability criteria, be it within the pillar of economic, environmental or social, should be taken into project performance assessment.

Table 3 Summary results on opinion of sustainability impacts on project success

No Impact	Little Impact	Some Impact	Significant Impact	Critical Impact	Rating Average
2	7	30	50	12	3.62

To a further extent, the respondents were asked to rank the relative importance of the three sustainability success criteria (1 = most important; 2 = important; 3 = least important). The results are indicated in Table 4 below. The ranking obtained is Economic Sustainability (58/101 ranked 1st), Environmental Sustainability (27/101 ranked 2nd), and Social Sustainability (23/101 ranked 3rd). If the responses of “Most Important” combine with “Important”, the ranking remains the same. The results agree with Shen et al. (2010) study. It indicates that project managers still concern economic impact over others. Moreover, the vote on economic sustainability (58) as “Most Important” is twice of respective environmental sustainability (27) and social sustainability (23).

To answer Mui and Sankaran (2004) questions on the suitability of generalizing specialist (project manager) or specializing generalist (sustainability manager – professional specialized in sustainability activities) in taking a project leading role in handling such sustainability activities in the development process and the lack of knowledge tools to support (e.g. inclusion of sustainability knowledge area in the PMBoK Guide or APM BoK), respondents were asked to express their opinions in these respects. The results of the two aforesaid questions are shown in Table 5 below.

Table 4 Summary results on relative importance of sustainability as success criteria on project success

	Most Important (1)	Important (2)	Least Important (3)	Total Count
Economic sustainability	58 (Ranked 1 st)	29	14	101
Environmental sustainability	27 (Ranked 2 nd)	48	26	101
Social sustainability	23 (Ranked 3 rd)	41	37	101

Table 5 Summary results on leading role and sustainability knowledge tool

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Rating Average
Care of project sustainability activities is the job of sustainability manager and not the job of project manager	15	45	20	16	5	2.51
Sustainability as essential knowledge area shall be included in the published guidebook of project management body of knowledge	1	3	22	49	26	3.95

Many respondents in the project management community (59.4%) prefer project manager to take charge of project sustainability activities; and that most respondents (74.3%) agree to include sustainability as essential knowledge area in the published guidebook of project management body of knowledge.

Lock (2007) concerns about sustainability of humankind and believes that project managers by managing project sustainably can be part of solution to building a sustainable society. Although Shen et al. (2010) find that some project managers in their study do not find themselves contributing to a sustainable world, imminent trend of managing project sustainability is, nevertheless, emerging. Following Brundtland Report in 1987, some project management researchers and practitioners engaging in delivering project success aim not only to fulfilling economic terms but require to

meeting environmental and social requirements, such as requirements by the Equator Principles Financial Institutions (EPFI) in the project finance sector, that infrastructure projects and other high sustainability impact developments seeking project financing are unavoidable to follow more stringent practice.

Working on conceptual framework, Belassi et al. (1996) and Atkinson (1999) suggest that there is a need to plan, execute, monitor and control project holistically by considering economic, environmental and social impacts. Collins et al. (2004) identify from their Australian project managers study that environmental and social sustainability are criteria for project success though ranked bottom in the list. In this survey, a clear message is obtained from the project management community that integrating of economic sustainability, environmental sustainability and social sustainability criteria form either significant or critical impacts on project success. Though the message is clear but there is no measurement in this survey about individual sustainability impact on project success. Hence, it is necessary to differentiate the nature arising from individual sustainability impact.

Further study

As discussed above, a pilot study after the said survey for preparation of upcoming comprehensive study was conducted to differentiate the impact of individual sustainability factor on the meaning of project success. In this pilot study, the same group of survey respondents were asked to answer further questions, however, only fifty (50) project managers responded to my request. Factors on environmental sustainability criteria making reference to Hill and Bowen (Hill & Bowen, 1997), Maldonado-Fortunet (Maldonado-Fortunet, 2002) and Tam (Tam, 2010) were given to participants such that they could indicate the degree of impact on project environmental success.

Hill et al. (1997), Maldonado-Fortunet (2002) and Tam (2010) suggest that use of renewable resources as preferred choice (Q1); employ practice of environmental resource minimization (Q2); create a healthy and non-toxic environment (Q3) and maintenance of Earth's vitality, ecological diversity and landscapes (Q4) by the project help delivering environmental sustainability. Corresponding four questions are constructed to seek opinion of respondents on the item(s) of environmental sustainability that impacts on project environmental success. Q5 is being constructed to check with project managers if environmental sustainability is a criterion for project success.

Four items from literature review as shown above within the environmental sustainability dimension are taken as independent variable for building up a list of questions. Dependent variable is project environmental success dimension of project success. In other words, with more positive impact exerted on environmental sustainability independent variable item(s), a higher project environmental success as dependent variable is expected. The questionnaire contains closed-end questions and that 5 points Likert scale is used to measure project managers' opinion about the impacts of environmental sustainability on project environmental success (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree). Due to time limitation in this pilot study, 5 questions are constructed without collecting demographic details of the respondents for further analysis.

Table 6 Summary on number of responses in the survey

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q1: Chosen of renewable resources (energy and material) as preferred choice will have positive impact on project success.	0	3	23	17	7
Q2: The practice of environmental resource minimization (including reuse and recycling of resources) will improve the chance of project success.	1	0	18	25	6
Q3: Project creating a healthy and non-toxic environment to stakeholders will have positive impact on project success.	0	1	9	32	8
Q4: Construction project considering maintenance of Earth's vitality (e.g. ecological diversity, landscapes) will have positive impact on project success.	1	0	21	21	7
Q5: Project environmental sustainability is a criterion for project success.	0	1	13	27	9

Fifty (50) respondents (project managers) out of 101 potential participants responded to the pilot study by completing the questionnaire. Table 6 above shows the summary on number of the responses. In doing analysis, SPSS 18.0 version has been employed to carry out stepwise multiple linear regressions in constructing a model relating environmental sustainability to project environmental success. Details of the analysis will be reported separately.

In this pilot quantitative study, a three-pillar approach has been adopted to investigate the impact of environmental sustainability on project environmental success. The SPSS outputs of the pilot study suggest that, in the four independent environmental factors, it is only Project Maintaining Earth's Vitality constitutes environmental sustainability impact on project environmental success. This factor explains 39.6% of the variance of the success on project environmental sustainability and that there may have other factor(s) influenced on the same. We need to increase the sample size later in the comprehensive study to test whether other factor(s) (e.g. Practice of Environmental Resource Minimisation) would be included in the model. Inference can be made that some factors are having significant effect while others shall have less impact on project environmental success. Nevertheless, the regression equation generated from this pilot study has confirmed empirically that factor in environmental sustainability would have impact on project environmental success. A comprehensive study on each sustainability dimension is recommended such that the knowledge base

developed helps project managers in managing project sustainability in their project planning and execution process. Criteria on economic sustainability, environmental sustainability and social sustainability identified in empirical comprehensive study would have made contributions to knowledge in building a sustainable society.

Conclusion

Project management and sustainability are two subjects but closely intertwined leading to building a sustainable society. The system perspective of managing project sustainability and the sustainability competence of project managers are discussed. They are critical ingredients in managing project sustainably. Project managers in this survey offer the view that integrating sustainability criteria (economic, environmental and social) into project development would have made either significant or critical impact on project success. Survey results also show that economic sustainability is the most important success criterion to project managers on project success while social sustainability is found to be least important to survey participants. Project managers find themselves accountable in managing project sustainability activities. In other words, it is project manager whom is responsible for managing the whole development process including any activities linked to external environment and the social community. To facilitate their work and enhance capability in delivering sustainability related performance, project managers would like to have related essential knowledge area to be included in the published guide book of the project management body of knowledge, such as PMBoK published by the Project Management Institute (PMI) in the United States. The survey did not differentiate individual impact but a follow up pilot study to measure the correlation of environmental sustainability criteria on project environmental success show that “Project Maintaining Earth’s Vitality” explains 39.6% of the variance to project environmental success. The pilot study provides a good preparation for later comprehensive study covering factors of each dimension of respective sustainability pillars on project success.

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