

# Sustainability of Three Recreational Forest Landscape Management in Selangor, Malaysia

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Different stakeholders managed recreational forests in Selangor, Malaysia. These stakeholders' involvements have risen a question whether their development have fulfilled the sustainable landscape requirement. The aim of this study was to understand and generate more comprehensive knowledge on the recreational forest landscape management towards forest sustainability. The objectives of this study were to evaluate the management of recreational forest in Selangor, Malaysia that affect landscape sustainability and to gain an overview of recreational forest landscape development in Peninsular Malaysia. The study applies three methods. First is the analysis of documents relating to sustainable landscape concept. Secondly, through case studies where three recreational forest sites in Selangor were selected to analyze their management practices towards landscape sustainability. Thirdly, field observations were carried out to collect data about existing physical conditions of the study sites. The results revealed that landscape management of these recreational forests were not in accordance with landscape sustainability approaches and needs improvement. This was caused by improper planning, low understanding among the staffs regarding sustainable landscape management, shortage of knowledgeable personnel, and poor supervision. Failure to adopt and implement sustainable landscape practices which include environment protection, social improvements, good governance, aesthetics enhancement, economy benefits, and harmonized designs can lead to the increase in the "abandon syndrome" of some recreational forest sites in Peninsular Malaysia.

**Keywords:** *sustainable landscape management, landscape architecture, landscape management, recreational forest.*

## 1. INTRODUCTION

From a landscape perspective, sustainable landscape refers to the role of landscape in sustainable development and to the sustainable protection, management, and/or planning of landscapes (Selman, 2008). In landscape architecture and planning, there is a professional subculture that interprets sustainability in terms of low-impact design (Dunnett & Clayden 2007). Selman (2008) divides sustainable landscape into two aspects. First is the design and scenic assets protection and second, the relationship between ecosystem services and human well-being. This means that in sustainable landscape development there is a need to focus on restoration, preservation, conservation, protection of natural systems, maintaining natural function and

environmental quality in developing a forest area (Schutzki & Tripp, 2007).

Sustainable landscape development also requires reconciling society's development goals with the capacities of landscape systems to deliver ecosystem services over long-term (Clark & Dickson, 2003; Kates et al., 2001; NRC, 1999). Landscape systems are complex, adaptive, and tightly coupled social-ecological systems (GLP, 2005). Therefore, continuously sustainable states of landscapes are unlikely and efforts for supporting sustainable landscape development should always aim at making progress on a transition towards sustainability (NRC, 1999). Sustainable landscape development is generally considered right at the inter-section of environment, economy, and society. It is also

further influenced by two other dimensions which are governance and aesthetic sustainability (Selman, 2008).

There are six factors affecting landscape sustainability of recreational forests. The first one deals with landscape ecology of spatial patterns and processes (Farina, 2006; Selman, 2008). This is commonly referred to as the green infrastructure which involves biodiversity network of habitat patches and corridors in maintaining healthy and practical populations (Selman, 2008). It also refers to soil and nutrient conservation, water quality, hydrology systems and vegetation's (Haines-Young et al., 2006). A proper recreational forest landscape planning (especially in terms of human made landscape elements) is necessary because landscape is an ecological entity that is dynamic and changes according to situation and disturbance (Ismail & Mohd Sarofil, 2005). Human activities frequently cause impact to the environment causing resulting environmental destruction and creating unhealthy environment to living things.

Secondly, sustainable recreational forest landscape relates to the economy. This relates to benefits such as recreational activities that makes certain places interesting and has values to the public (Powell et al., 2002; Selman 2008; Vollet et al., 2008). Those economic benefits should also bring benefits to local people to improve their quality of life. Furthermore, Jamieson and Noble (2000) claimed that recreational forest development should provide job opportunity, reducing poverty and cut social inequality and increase social services to the local community. Thus, a proper and systematic recreational forest landscape development needs to take into account local community economic enhancement to make sure the sustainable use of recreational forest.

Thirdly, sustainable recreational forest landscape is also related to the needs of local populations. For generations, parks including recreational forests have played important roles for people, and contributed to social and cultural aspects of their lives (Osman, 2005; Nicol & Blake, 2000). Parks also provide a powerful setting for "social" (Collins et al., 2007) and "sustainability" learning (Tabara & Pahl-Wostl 2007). Thus, local participation in recreational forest landscape plans and design process is necessary. This is to ensure their requirements are met and to avoid injustice in decision-making

as well as to get their full support (Botes & Rensburg, 2000). Buchecker et al. (2003) argued that local participation exercises in planning and landscape design process of recreational forest landscape need to be improved to increase their understanding on landscape sustainability. Unfortunately, in Malaysia, there are still many local participation exercises that do not take into account people's real opinions and their needs. This is because when authority organized local participatory exercises, it only involves the authority giving information to the public but not really getting any real feedback from them (Ahmad, 2001 as cited in Mohd Yazid, 2009).

A fourth factor is good governance. This is closely related with political sustainability and requires effective governance structures, for both the private and public domains (Selman, 2008). Good governance also requires a stable governance to ensure that landscape development requirements are being implemented according to the strategy with high integrity and intentness (Hamilton & Selman, 2005). Good governance is important at all levels i.e., from international to local levels. However, it is particularly important at the local level, where numerous high-level decisions can be implemented, ignored or even contradicted (Rametsteiner 2007). Szerletics (2011) highlighted the characteristic of good governance as follows:

- (1) *Transparency* – decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to those who will be affected by such decisions and their enforcement.
- (2) *Responsibility and accountability* – the decision-makers in the government, private sector and civil society are accountable to the public and/or to their institutional stakeholders.
- (3) *Participation* – the public can participate (either directly or through representatives) in the decision-making and the implementation of public projects or other government activities.
- (4) *Responsiveness to the needs of people* – good governance requires that institutions try to serve all stakeholders within a reasonable timeframe.
- (5) *Effectiveness* – processes and institutions produce results that meet the

- needs of society while making the best use of resources at their disposal.
- (6) *Equity and inclusiveness* – this principle requires that all groups, but particularly the most vulnerable, have opportunities to improve or maintain their well-being.
  - (7) *Rule of law* – this principle requires fair legal frameworks that are enforced impartially.
  - (8) *Consensus oriented* – good governance requires mediation of the different interests in society to reach consensus.

Clearly, good governance of recreational forest needs transparency, accountability, regulatory reform, skills, cooperation, leadership and public participation in their implementation process. The author believes that good governance actually is very important in creating a responsible and conducive recreational forest environment. This is especially in their implementation and management.

The fifth factor is related to landscape aesthetic values. Aesthetic value has influence people to react towards recreational forest landscapes based on their experiences in proximity of the landscape (Gobster et al., 2007). This is because people try to value or perceive recreational forest landscape through aesthetical values such as to what they observe and to how the landscape is being managed. Selman (2008) claim that landscapes have varying degrees of legibility that betray underlying narratives and the extent to which we appreciate or denigrate a landscape is closely related to the way people are taught to “read” it. Apart from that, landscape aesthetic also has a close relationship with ecology that gives impact to planning, design and management of natural sites (Gobster et al., 2007). An exploration on how people appreciate recreational forest landscape could be explored to understand how people aesthetically value landscapes (Gobster, 2008).

The sixth recreational forest landscape sustainability factor is the design aspect. The design of sustainable recreational forests must be in harmony with natural forest landscapes. It should take into account their own unique features that highlight the forest identity and act as a tourism product besides being sites of recreational activities (Jacobs, 1993). The design also must have good combinations between the natural environment and architectural aspects such as application of vernacular architecture

(Schmid, 1983). Design of hardscape structures (e.g. pedestrian path, signage, shelter, etc.) as well as buildings, must be visually in harmony with the surrounding natural environment (Schneider, 1981). Forests with high panoramic values should have buildings with good style that is in harmony and did not contradict the existing environment (Doczi, 1994). Design of buildings and other structures should depend on climate, temperature, light and color (Stouter, 2008). These factors must be seriously considered during the design process. Ceballos-Lascurain (1996) and Walter (1987) suggested that the most important consideration is that the structure and building designs in recreational forest must highlight aspects of the surroundings.

## **2. AIM AND OBJECTIVES OF THE STUDY**

The aim of this study was to understand and generate more comprehensive knowledge on the recreational forest landscape management towards forest sustainability. The objectives of this study are to evaluate the recreational forest management in Selangor, Malaysia that affect landscape sustainability and to gain an overview of recreational forest landscape development in Peninsular Malaysia.

## **3. METHODOLOGY**

This study applied three methods. The first is the document analysis of relevant literature where the author analyzed the topic of sustainable landscape concept to understand the topic and to find out what has been done by other researchers on recreational forest landscape sustainability. Peer-reviewed literature and best practice guidelines were also included in the study. Even though the best practice in sustainable landscape does not appear in peer-reviewed journals, they are based on experiences and practical knowledge of the experts in forest park management that is being considered important.

Secondly, the study involved a case study where three recreational forest sites in Selangor State, Malaysia were selected. These were Sungai Tekala Recreational Forest, Sungai Chongkak Recreational Forest and Templer Recreational Forest. Case studies were used in this study because this method is applicable to real-life, contemporary, human situations. Case study results also relate directly to the common

reader's everyday experiences and make easy to understanding the complex real-life situations (Soy, 1997).

Thirdly, field observations were carried out to collect data about existing physical condition of the study sites. Field observations were carried out in detail, free from bias, and care was taken to ensure the information gathered were original and reliable (Lee, 1976; Mohd Kher, 2012). Photographs were taken during field observations as evidences of visual assessment regarding current status of landscape management works on the study sites.

Recreational forests in Selangor were selected for this study because Selangor is the fastest developed states in Malaysia and forest recreations have a high demand from the public. The rate of urbanization in this State is expected to increase significantly mainly due to migration of people from surrounding states, as well as the influx of foreign workforce. This has resulted in conflicts between urbanization and forest reserve. Moreover, Selangor has the highest population in the Klang Valley that has put pressure to their forest as well as recreational forest for land use (e.g. housing development and industrialization). This presents a challenge for recreational forest landscape development and management strategy in ensuring their forest are not affected by those development and being managed in a sustainable way. Selected study sites are also easily accessible by the public and this posed challenges to the forest authority name the Selangor Forest Department seeking to improve the landscape including existing facilities.

#### 4. RESULTS AND DISCUSSION

Currently, there are ten (10) recreational forest sites in Selangor managed by different stakeholders: Selangor Forestry Department (SFD), Selayang Municipal Council (MPS) and Tourism Selangor Sendirian Berhad (TSSB) (Table 1). Different stakeholders involvement have resulted to more development focused been given on getting revenue and profits for managing the site. SFD and MPS are the stakeholders that have motivated towards conservation, while TSSB seemingly geared to profit stakeholder. Indirectly, this phenomenon is not in line with the main goal for recreational forest establishment to increase awareness among the public towards forest functions in

daily life and sustainable use of natural forest resources in Malaysia.

In general, the three study sites have very similar characteristics in terms of accessibility, layout, and man-made elements, particularly the buildings. However, each study site has their own uniqueness and there are being determined by their topography, either hilly or otherwise, waterfall and history. Two of the study sites are generally well-preserved in terms of forest originality. Templer Recreational Forest, however, is under threat due to rapid development in the surrounding areas such as housing development, road constructions and golf course.

Table 1: Recreational Forest in State of Selangor, Malaysia

Recreational Forest	Manage By
Gunung Nuang, Hulu Langat	SFD
Sungai Tekala, Hulu Langat	SFD
Sungai Tua, Ulu Yam	SFD
Sungai Chongkak, Hulu Langat	TSSB
Sungai Sendat, Rawang	SFD
Kanching, Rawang	TSSB
Templer, Rawang	MPS
Ampang	SFD
Komanwel	SFD
Hulu Perdil	SFD

(Source: Forestry Department Peninsular Malaysia 2007)

#### 4.1 SUNGAI TEKALA RECREATIONAL FOREST

Sungai Tekala Recreational Forest is located in Hulu Langat district (coordinates 03° 03'62 "N 101° 52'13" E). This park is part of the Sungai Lalang Forest Reserve consisting of lowland Dipterocarp Forest type. The Selangor Forestry Department (SFD) developed this park in 1982 and it was opened to the public in the same year. This recreational area is approximately 2,062 hectares. SFD still managed this area until today. This park is intended to be developed as a recreational area and for environmental educational purposes. The park charges an entrance fee of MYR1 (USD 30 cents) for adults and MYR0.50 (USD 15 cents) for children 12 years and below.

From an ecological aspect, its sustainability is being threatened because the landscape development of this site was implemented without a proper landscape master plan. The development was carried out on an *ad hoc* and *in situ* basis depending on visitors suggestions of what facilities were required by them. Others were provided by the Department regardless of whether they were actually needed or not, or whether they were suitable for the locations and have adverse impacts on the surrounding forests. Failure of the management to control the number at one point in time has caused overuse of the forest park and led to soil compaction impacting existing vegetation. Urgent solutions need to be carried out by the management to ensure future park ecological sustainability.

It was also observed that facilities were not designed in harmony with the surrounding

environment and lacks the forest identity. Most of their designs seem to be similar to those of urban parks (Figure 1). If this continues, it can result in failure to achieve its sustainable development goal. In terms of architectural designs, it portrays local traditional Malay architecture (Figure 2). This is evidenced in the typical roof design and materials used (wood and clay bricks). The color schemes chosen are those of green and chocolate inducing “cool” and “peaceful” response in visitors (Brenda & Robert, 1996). Those colors are suitable for forest environment and can influence user comfort (Arwed 1992). Enhancing local indigenous design, materials and natural colors is a good step taken to indicate local environmental influences (Ceballos-Lascurain 1996; Walter 1987).



Figure 1: Some of the forest recreation designs similar to urban park designs in Sungai Tekala Recreational Forest.



Figure 2: Enhancing Malay architecture to show local culture and in line with ecotourism concept.



Figure 3: Poor maintenance causing damaged and unusable structures and equipment in Sungai Tekala Recreational Forest.

The management paid special attention to site cleanliness such as regular rubbish collection, sweeping dry/fallen leaves along pathways, toilets cleaning and waste disposal. However, maintenance work for human made landscape elements such as shelters, benches, rubbish bins, bridges, signage and pergola, were not promptly carried out whenever required. This attitude has resulted in some structures and equipment seriously damaged, unusable and affecting the park aesthetic values (Figure 3). Therefore, it is necessary for the management to prepare and set up proper maintenance plan and schedules to fulfil sustainable concept enhancing the aesthetic value to users. This is very important to ensure their quality experiences were not degraded and they have positive reactions towards the site when using the park.

There is very little local participation in the management of Sungai Tekala Recreational Forest management. Local people were not involved in the management process such as in discussing the future direction of park development. They were also not consulted to determine recreation activities and choice of facilities and equipments. Therefore, the management should be more proactive in finding ways to increase community involvement in park planning development and activities. This could be done through “homestay”, “agro tourism” and cultural activities. It is recommended that local community representatives be appointed to allow them to be involved in the development process through Recreational Forest Development Committee. These involvements would increase their ability to give ideas, opinions, better cooperation and commitment in conserving recreational forest in their area. This can lead to the achievement of landscape sustainability of recreational forest objectives.

In terms of governance, Sungai Tekala Recreational Forest has relatively good governance by the Selangor State Forestry Department (SFD). SFD has sufficient foresters who are excellent in forest management. However, the department lacks expertise in site selection, planning, management as well as technical expertise in preparing and implementing a systematic working plan of landscape design, construction and management (Chee, 1986, Mohd Kher, 2012). This lack of expertise has resulted in deficiency of eco-design approach for human made landscape elements such as bridges, shelters, toilets and other

facilities. It is recommended that the management appoint a qualified landscape person including landscape technicians competent in built environment design and management. At the same time, the management needs to establish a unit specifically overseeing recreational forest development. The unit should consist of forester, landscape architect, engineer, ecologist and architect.

From the economic aspect, the park management allowed the participation of local community where they are allowed to run a small businesses catering to visitors outside the park boundary. This has helped locals to improve their economy by selling fruits, drinks, handicrafts, and other agriculture produce (e.g. durians, petai, mangostane, bananas and mangoes). Nevertheless, locals are not much involved in recreation/tourism related employment (e.g. as park ranger/park controller). Thus, the management needs to increase opportunities where local youths can be trained to work various jobs in the park.

## **4.2 SUNGAI CHONGKAK RECREATIONAL FOREST**

Sungai Chongkak Recreational Forest is located in Hulu Langat district (coordinates 03° 12'41" N, 101° 50'27" E). This area covers approximately 2,865 hectares of lowland Dipterocarp Forest types and is part of the Sungai Lalang Forest Reserve. The Selangor State Forestry Department developed this park in 1992. Beginning in January 2005, SFD handed over the management of this site to the Tourism Selangor Sdn. Bhd. (TSSB). This was done due to shortage of manpower, increase in costs of maintenance and insufficient budget. Since TSSB took over the park, ecotourism concept with sub-concept of ‘resort’ had been implemented in 2005. TSSB applied ecotourism concept with “resort” as sub-concept to encourage families or other groups to participate in their recreational activities. TSSB also aimed to attract foreign tourists by offering conveniences and providing international standard accommodation facilities. Thus, the park has now been turned to tourist destination and charged entrance fees of MYR1 for adults but free for children aged 12 and below.

From an ecological perspective, the Sungai Chongkak Recreational Forest faces threat due to lack of a comprehensive plan being developed by



the management. Currently, TSSB only applied the development *ad hoc* approach where the development was based on users' requests. This approach is unsuitable and has resulted in environment degradation such as soil erosion, flora and fauna destruction, and visual quality reduction (Figure 4).

However, Mustaqim-Alias & Ahmad (2013) claimed that Sungai Chongkak is clean and suitable as a recreational stream. Nevertheless, it is very important to consider soil susceptibility to erosion and protection of soil and water resources in forest-based recreation (Maleknia et al., 2013). In the meantime, a landscape master plan should be prepared. It should be sensitive to the environment, manage the recreational forest to satisfy user needs, highlight opportunities presently exist on site and the necessary actions necessary to bring about the level of recreation sought by the public.

In terms of design, it was found that Sungai Chongkak applied medium designs (buildings are not too huge and high) and portrays Malay architecture (Figure 5). Malay architecture seems to be more sensitive to local context and environment, and can be applied to fulfil ecotourism concept. Construction materials selected for the park are largely of natural

materials like wood and clay bricks. These are more in harmony with nature and did not pollute the natural environment (Zucker et al., 1983). The color applied to the accommodation buildings portrays peacefulness and harmony (Brenda & Robert, 1996) with surrounding environment which is green and chocolate. It does also create unity towards the environment as well as influence users convenience (Arwed, 1992).

To maintain the aesthetic values of the park, cleanliness, grass cutting, rubbish collection, sweeping fallen leaves, toilets cleaning, bench wipes and keeping the chalets tidy are normal tasks that have been carried out. These efforts reduce visual interference to the visitors such as from rubbish mass, dirty walkways, roads damages, and fallen trees. Furthermore, TSSB has also done repairing and reconstruction works for accommodation in ensuring users safety and convenience as well as increasing their experiences. Those activities have maintained and enhance the aesthetic value of the park. However, from field observation, there are some elements that need to be repaired. For instance, floor replacement for wooden bridge, repainting and repairing works for wooden table and cleaning the fallen leaves on the roof and wild grasses on pedestrian walkways (Figure 6).



Figure 4: An *ad hoc* development approach of Sungai Chongkak Recreational Forest leading to environment degradation.



Figure 5: Malay architecture applied in structure design in Sungai Chongkak Recreational Forest.



Figure 6: Some elements in Sungai Chongkak needs repairing and reconstruction works and wild grass on pedestrian walkway need to be clean off.

From economic aspect, the author noticed that the indirect benefits of the park are shared with the local community as what Sungai Tekala management had done. The management allowed local people to run a small business in and surrounding the park. This has helped the local people to increase their socio-economy through fruits, drinks, recreational essentials and other agriculture products (e.g. papaya, petai, tapioca, bananas and pineapple) selling. However, that activity only benefits small number of local residents. More effort need to be carried on to increase the economic benefit of the local people such as the management should work with local tourism bodies to configure recreation facilities to bring most added values to the local economy and work with local community groups who wish to develop facilities, or offer franchises or agreements for on-site infrastructures development.

In term of local participation, author noticed that TSSB has taken a good step in involving the locals into Sungai Chongkak Recreational Forest landscape management system. There are seven local people that have being appointed as general workers. At the same time, several lots of business space have been established in the park to give opportunities for them to run business (as food and souvenirs sellers). This has contributed to positive economic growth of local peoples directly or indirectly. However, local community involvement should be increased by appointed representatives among them in management and invited them to attend meetings related to Sungai Chongkak Recreational Forest landscape development in the future. TSSB can also make a memorandum of understanding (MoU) with local people for homestay and agrotourism projects surrounding the Sungai Chongkak Recreational Forest. In fact, local people who involved in managing natural resources will be more compliant with the rules

that themselves have built over the rules imposed on them by force (Wilshusen et al., 2003).

In term of governance, TSSB can be considered as weak in landscape planning, design, construction and maintenance. This is because TSSB does not have any professionals in those fields, but they have professionals in tourism activity and marketing. Nevertheless, TSSB has formed a collaboration activity with Kajang Municipal Council (MPKJ), SFD and Indah Water Consortium in construction works. However, the collaboration exists only when it is necessary (when a new accommodation/facility wanted to be build) and not from the beginning of the development process. These situations happen because TSSB develop human made landscape elements according to the necessity and user's need. Therefore, to make sure the collaboration exist in a whole development process, it is suggested that TSSB form special work group that includes several experts namely landscape architect, engineer, architect, forester and product manager for their recreational forests sites under supervision.

#### 4.3 TEMPLER RECREATIONAL FOREST

Templer Recreational Forest is located at coordinate 03° 17'60" N 101° 39'25" E. Their vegetations is a type of Lowland Dipterocarp Forest. This recreation area is about 853 hectares. The area is bounded by the Ulu Gombak Forest Reserve in the east, Serendah Forest Reserve in the north and Kanching Forest Reserve in the west (Gangadharan, 2005). In October 1955, the government has allowed Friends of Templer Park Society to manage the park and they have been given MYR10,000.00 every year (Nadchatram, 1971). The society managed the park until January 2002. Starting February 2002, MPS takes over the management until today (Gangadharan, 2005). MPS has a plan to develop the Templer Recreational Forest as a tourism site based on ecotourism concept



and recreational activity. Currently, MPS has appointed consultant to prepare overall Templer Park Landscape Master Plan. This step has been taken since earlier management did not provide any development plan including landscape master plan for the area. The park is free to the public.

Nowadays, the ecological integrity of Templer Recreational Forest is being threatened due to development pressure. Author noticed that there are construction works in the vicinity of the park such as housing development (bungalow and high-end terrace house), road project and golf courses. These have resulted in deforestation, losing the rare and endemic forest tree species such as *Hopea subalata* and impact the streams quality in the park due to erosion. Therefore, a close and thorough monitoring need to be done by the management to make sure the ecological stability of the park are not affected seriously in the future.

During the field observation, it was found that the designs of some landscape elements are

less in harmony with the surrounding environment. This is especially true with an element that has been built by the earlier management. Those elements have been built on an *ad hoc* and *in situ* basis, without any suitability and environmental effects study (Figure 7). It is recommended that the management replace unsuitable materials used earlier to a more harmony materials such as natural stones. Meanwhile, new landscape elements that has been built by MPS are looking more eco-friendly and harmony with surrounding environment such as *wakaf* and public toilet (Figure 8). The architecture itself portrays Malay architecture that enhances local design with calm and peaceful colors (earth colors). Materials used for construction which are more resistant to the climate change were made from concrete and clay bricks. The used of wood as construction materials were reduced by the MPS due to high maintenance. Furthermore, footing system has been used for flood protection and erosion especially near the river bank and steepest area for certain elements.



Figure 7: Materials that have been used by earlier management before MPS take over such as marbles and zinc are less harmony with surrounding environment and causes visual interference and it did not fulfil the ecotourism concept.



Figure 8: New landscape elements that have been built by MPS are looking more eco-friendly and harmony with surrounding environment such as *wakaf* and public toilet.



Figure 9: Some landscape elements in Templer Recreational Forest are unsafe to users and in bad conditions due to landscape maintenance system weaknesses, no inspection and lack of budget.



Figure 10: Lacking supports from public to Templer Recreational Forest development could cause site “abandonment”.

In ensuring the park aesthetic is in good condition, cleanliness activity has been carried out every day while repairing and reconstruction works of structural elements such as toilet, *surau*, shelter and others were carried out when necessary. However, it was found that some of the landscape elements in the park are in bad conditions, unsafe to users and affecting the beauty of the park (Figure 9). This situation happens because there are some weaknesses in maintenance system and no inspection tasks have been taken to inspect the landscape elements condition regularly as well as budget constraint. Aesthetic of the park was also being threatened by unsuitable developments like electric power line across the park. Unsuitable materials used such as marbles for park facilities also contributed to the aesthetic value degradation.

Economically, Templer Recreational Forest benefited the local residents. MPS has built specific building for them inside the park to do business like selling foods, drinks and snacks. The author believed that in the future, local people will receive more economic benefits due to MPS planning to develop the park as one of their tourism attraction. This effort indirectly will attract more investors for ecotourism

activities in this recreational forest and attracting more tourists to visit the park. In the meantime, MPS did not impose any charge to the user, thus they are free to use, enjoy and do recreation activities that they like in the park. These indirectly will reduce their burden to find a space for outdoor activities for practicing healthy lifestyle.

On the aspect of local participation, it was found that the involvement was very low. MPS involves them only as food and beverage sellers at business space provided in the park, similar to Sungai Chongkak and Sungai Tekala Recreational Forest. Even though MPS claimed that voices from the public (especially for those who had business in the park before) has been accounted, it did not represents the whole local community voices. Previously, local communities via Friends of Templer Park Society was given a chance in managing the area, but this permission was taken away recently. This situation has resulted in the local community perceiving that their involvement is no longer needed. At the end, their supports to Templer Recreational Forest development were lower and could cause site “abandonment”. This situation can be seen through the close proximity

to housing and village area, beside the main roads, but the number of daily and weekend visits from local people were very low. These situations portray that local community ignore the Templer Recreational Forest existence. If this phenomenon continues, it will give some difficulties to MPS to fulfil sustainable development concept because of lower public involvement.

Looking at the governance aspect, MPS has a good management structure. MPS has enough experts like landscape architects, architects, engineers, planners, technical staffs and administrators for managing the park. But, MPS has failed to fully use their staffs in giving full commitment and focus for Templer Recreational Forest development. This can be seen where there is no special groups formed among their experts in discussing the park development. Thus, there is a room for improvement especially

in benefitting the internal experts that MPS have. Thus, it is suggested that MPS form experts' team among their internal experts to gain concrete ideas and full commitment for the recreational forest. Through these expert groups, planning and development of recreational forest will be more efficient and effective as well as reducing consultancy costs.

#### 4.4 ANALYSIS TOWARDS SUSTAINABLE LANDSCAPE DEVELOPMENT

Table 2 shows the results of analysis towards sustainable landscape development of the study sites. Analyses were focusing on landscape ecology, economy, local participation, governance, aesthetic and landscape designs aspects which eventually need to be fulfilled by respective management for achieving sustainable landscape development of recreational forest.

Table 2: Analysis towards sustainable landscape development of the study sites

Sustainable Aspects	Study Sites		
	Sungai Tekala	Templer	Sungai Chongkak
<b>Landscape Ecology</b>	<ul style="list-style-type: none"> <li>• Maintained natural forest from serious /major damages</li> <li>• Established nursery plots for educational purposes</li> <li>• Established demonstration plots for forest management educational purposes</li> <li>• Has clean river and small waterfall that are suitable for water activities</li> <li>• Maintained existing natural topography</li> <li>• Rich with faunas</li> </ul>	<ul style="list-style-type: none"> <li>• Prepared overall landscape master plan</li> <li>• Maintained existing natural topography</li> <li>• Used eco-friendly method in controlling river bank erosion</li> <li>• Has waterfalls that is in good condition that portrays natural environment</li> <li>• Forest vegetations in virgin condition</li> <li>• Rich with faunas</li> </ul>	<ul style="list-style-type: none"> <li>• Preserved natural forest conditions from major damages</li> <li>• Has bigger and linear flat area for activities</li> <li>• Has clean river that is suitable for water activities</li> <li>• Forest vegetations in virgin condition</li> <li>• Maintained existing natural topography</li> <li>• Rich with faunas</li> </ul>
<b>Economy</b>	<ul style="list-style-type: none"> <li>• Provided business spaces for small business activities such as food and beverage</li> <li>• Privatized rubbish collection and cleanliness activity</li> <li>• Developed the park as recreational area</li> </ul>	<ul style="list-style-type: none"> <li>• Provided business spaces for small business activities such as food and beverage</li> <li>• Privatized construction and reconstruction works</li> <li>• Developed the park as recreational and ecotourism area</li> </ul>	<ul style="list-style-type: none"> <li>• Provided business spaces for small business activities such as food and beverage</li> <li>• Appointed local peoples as cleanliness staff</li> <li>• Privatized construction and reconstruction works</li> <li>• Developed the park as recreational and ecotourism area</li> </ul>

<b>Local Participation</b>	<ul style="list-style-type: none"> <li>Local participation through business activities</li> </ul>	<ul style="list-style-type: none"> <li>Gets early opinions from existing retailers before new business space will be build</li> <li>Local participation through business activities</li> </ul>	<ul style="list-style-type: none"> <li>Allow existing aborigine peoples in the park to continue collect forest products</li> <li>Local participation through business activities</li> </ul>
<b>Governance</b>	<ul style="list-style-type: none"> <li>Park was managed by Recreational Forest and State Park Unit, lead by Forest Officer</li> <li>Staffs expert in forest management</li> <li>Has initiative to have collaboration with other experts group via consultancy</li> </ul>	<ul style="list-style-type: none"> <li>Park was managed by Park and Recreation Unit, lead by Landscape Architect</li> <li>Staff expert in environmental design and landscape management</li> <li>Organization has experts group such as landscape architect, architect, planner and engineer that are suitable for recreational forest development</li> <li>Has initiative to have collaboration with other experts group via consultancy</li> </ul>	<ul style="list-style-type: none"> <li>Park was managed by TSSB Product Management Unit</li> <li>Staffs expert in tourism marketing</li> <li>Has initiative to have collaboration with other experts group via consultancy</li> </ul>
<b>Aesthetic</b>	<ul style="list-style-type: none"> <li>Maintained forest virginity for good panoramic</li> <li>Keep natural landscape in good condition such as waterfall and river</li> <li>Has undulating topography</li> </ul>	<ul style="list-style-type: none"> <li>Preserved interesting undulating topography including seven natural waterfalls</li> <li>Preserved natural stone hills for active recreational activity</li> <li>Has own historical value due to it was opened by British colonial</li> </ul>	<ul style="list-style-type: none"> <li>Preserved natural forest from major destruction</li> <li>Has shallow and linear river with a clean water and natural rocks</li> <li>River stones are nicely arrange naturally without human disturbance</li> </ul>
<b>Designs</b>	<ul style="list-style-type: none"> <li>Human made landscape elements quite harmony with existing environment</li> <li>Enhanced Malay architecture which is the local design</li> <li>Color scheme is harmony with existing environment</li> <li>Use local materials such as clay bricks and timber</li> </ul>	<ul style="list-style-type: none"> <li>Human made landscape elements quite harmony with existing environment</li> <li>Enhanced Malay architecture which is local design</li> <li>Color scheme is harmony with existing environment</li> <li>Use local materials such as clay bricks and timber</li> </ul>	<ul style="list-style-type: none"> <li>Human made landscape elements quite harmony with existing environment</li> <li>Enhanced Malay architecture which is local design</li> <li>Color scheme is harmony with existing environment</li> <li>Use local materials such as clay bricks and timber</li> </ul>

Table 2 has shown that SFD compliance is more on the aspect of ecological planning where they managed natural forest in the park more effectively which stressed on informal education for visitors that can increase awareness among the public. Furthermore, SFD is an experience stakeholder in managing forest resources. On the other hand, MPS complied more on the aspect of good governance practice since it encompass enough experts' group in implementing/practicing sustainable designs and has collaboration with other outsource experts via consultancy. For TSSB, their compliance is more on increasing local peoples' economy. Many local people are being appointed as parts of management staff and business opportunity had been given to them.

The above analysis also shown that all parties of respective recreational sites study need to improve their planning development, increase expert collaboration, involve more local people in management process, improve landscape maintenance system and programme, improve landscape designs and control the number of visitor. Most important thing is that the management needs to understand that the design concept of recreational forest should show the uniqueness of forest, which differentiates urban and natural design area. The design must put higher concerns with the natural environment through the understanding and adoption of the "sense of place" and "genius loci" of the site (Mohd Kher & Noorizan, 2006; Stephankova, et. al., 2012). All responsible parties should also seriously take into account the social, economic and environmental aspects of ecotourism activity that are being adopted on their site. This will ensure a quality and sustainable recreational forest landscape.

## 5. CONCLUSION

The sustainable development approach implemented for the studies of recreational forests in Selangor is good as it takes into account the environment, social and economy. It also stressed on unity and balance between socio-economic development and environment needs to fulfill current requirements without affecting future needs. At the same time, introducing recreational forest as ecotourism destinations is in line with sustainable development approach where it can educate publics in understanding and learning about

forest environment, culture, landscape appreciation, flora and fauna. Ecotourism is expected to bring a minimal impact on the environment as it stresses on environmental conservation and the preservation of the local community and culture. Ecotourism would also bring economic benefits to local communities.

However, this study also shows that recreational forest development in Selangor still did not implemented sustainable landscape development and thus need an improvement. This lack of implementation was due to a number of reasons including no proper planning, low understanding of sustainable concept, lack of staffs and insufficient supervision. If there are no constructive actions taken to remedy the situation, then the goal of sustainable development cannot be achieved. Therefore, several immediate actions need to be carried out. These include encouraging staff to attend related courses and seminars about sustainable landscape development, increase the staff numbers especially in landscape and built environment field and focus on landscape designs.

This study found that all study areas did not have landscape development master plan. Most of the development that has been implemented is on an *ad hoc* basis and according to users' demand. This has resulted in difficulty to create recreational forest identity and fulfill sustainable landscape development requirements. Human made landscape elements were also designed much like those in urban areas. A comprehensive master plan for each recreational forest area is necessary. The plan should focus on creating identity and more accurate decision-making to monitor the development process. This is very important to achieve landscape sustainability for recreational forests.

Recreational forest landscape development must be planned before implementation to make sure natural landscape resources (e.g. forest, river, hill, waterfall, stones, etc.) continuously be protected and preserved. It is also to make sure that human made landscape elements can be in harmony with existing environment. Thus, infrastructure must conform to environment-friendly, low-impact architecture; renewable including solar energy, waste recycling, rainwater harvesting, natural cross-ventilation, no use of asbestos, controlled sewage disposal, and merging with the surrounding landscape.



The design should enhance local architecture, use local materials as well as portrays local art and culture.

Finally, cooperation from all parties and stakeholders are needed in ensuring sustainable landscape development of recreational forest in Selangor towards forest sustainability. All levels of public including politician, professionals, supporting groups, local community and recreational forest users should play their own role in ensuring landscape sustainability. Development process of recreational forest landscape must start from down to top levels from user level, local community, owner, political and decision makers. In line with this, overall recreational forest landscape master plan is very important to be prepared to make their development more effective and efficient. It is also to make sure sustainable landscape development principles being fulfill by the management. Once it has become a reality, our forest will be more sustainable and abandon situation can being avoided for the benefits of future generation.

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