

RECREATIONAL FOREST LANDSCAPE DEVELOPMENT: A STRATEGY FOR MANAGING FOREST RESOURCES IN SUSTAINABLE MANNER IN MALAYSIA

Mohd Kher Hussein^{1,2}

¹Senior Lecturer, Department of Landscape Architecture, Faculty of Design and Architecture,
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia.

²Post-doctoral Training, Faculty of Landscape Architecture, Corvinus University of Budapest, Villanyi ut 35-43.
P.O.B. 53. H-1118 Budapest, Hungary, Building K 2nd floor.

Abstract

Natural forests have unique and beautiful landscape that meets recreation and ecotourism needs. They provide places for people to carry out activities such as recreation and nature appreciation. Many governments in the world have established Recreational Forests as a strategy to conserve and manage the areas concerned. However, how much the forest parks have been developed in a sustainable manner is still argued. Objective of this study is to understand the sustainability of recreational forest landscape and to analyze the current development towards sustainability. Approach of the study was based on literature review and case study. This study shows that the development of recreational forest landscape meets the concept of conservation, but fails to fulfill the concept of sustainability. Thus, knowledge and understanding on the concept of forest landscape sustainability need to be improved in recreational forest landscape development process for the sake of our fragile forest environment and future generation.

Key words: Recreational forest, landscape, sustainability, strategy, management and conservation.

1. INTRODUCTION

Natural forests have unique and beautiful landscape that meets recreation and ecotourism needs. They provide places for the people to carry out activities such as recreation and nature appreciation. Many governments in the world have established Recreational Forests as strategy to conserve and manage the natural forests. Recreational forest is a forest with constructed facilities to attract visitors (WWF Malaysia, 1996) and may attract a large number of visitors (Idris, et. al. 2013). But, bearing in mind that, recreational forests can deliver their recreation and ecotourism functions only if they are managed in sustainable manner. The forest can deliver the functions of protection or conservation expected from it only if it is both in its natural state and under good natural ecological conditions or, when in use, it is managed in a sustainable manner (Stepankova, Bihunova & Kabai 2012). Thus, in developing of these landscapes, sustainability is the main focus.

Recreational forest landscape has appeared long time ago. In Europe, it can be dated to the medieval times when kings and aristocrats took part in hunting (Bell & Petursson 2009). In US, forest recreation was established in 1905 as a locus for recreation for a growing urban population due to industrial growth (Cregan & Murphy 2006). In Malaysia, it started when Sir Gerald Templer (British High Commissioner in Malaya before Malaysia independent) opened up Templer Recreational Forest in 1954 (Mohd Kher 2012). Nowadays, recreational forest landscape has been developed intensively for economic benefits as well as to fulfill user needs. Starting from providing basic facilities, now some sites have chalets for overnight stay in the park. Indirectly, this gives pressures to the recreational forest landscape itself. Thus, the question is how much the current recreational forests have been developed in a sustainable manner in order to conserve the existing forest landscape environment?

The landscape of recreational forest is a fragile environment and sensitive to human disturbance. Any human made landscape elements necessary in the park should be designed and built carefully. Thus, a good strategy in creating recreational forests as well as proper management system is necessary in order to achieve the main goal of their development, which is for conservation. Ecotourism approach that has been applied in recreational forest development is perceived as an effective tool towards conservation. One of the main activities of ecotourism is nature appreciation, which can stimulate and enhance people's awareness towards natural environments (Mohd Kher & Noorizan 2007). Sustainable and wise use of recreational forests will protect our ecosystems for the benefit of future generations. Nevertheless, there is ongoing debate on whether the government's effort to develop tourism activities will destroy or reduce recreational forests, in particular.

2. AIM AND OBJECTIVE OF THE STUDY

The aim of this study was to investigate the recreational forest landscape development achieved in order to fulfill recreation and ecotourism needs. Objective of the study is to understand the sustainability concept of recreational forest landscape and to analyze the current development of the selected site towards sustainability.

3. STUDY APPROACH

This study applied two approaches as follows:

- i. Literature review - study and analyse sustainability concept related to recreational forest landscape, ecotourism and recreation.
- ii. Case study - assessing the development of Bukit Hijau Recreational Forest, Kedah, Malaysia as a case study in order to analyze its landscape development towards sustainability.

4. RECREATIONAL FOREST LANDSCAPE

Forest landscapes can range from large, continuous tracts of forest used for multiple purposes (production; cultural, recreational or environmental services; and the like) to mosaics of forests and blocks of trees within the rural landscape (Deweese et al. 2011). This area is a dynamic complex of plant, animal and micro-organism communities and their biotic environment interacting as a functional unit, where trees are a key component of the system, interact with one another and with the non-living part of the environment – including the soil, water and minerals (Stepankova, Bihunova & Kabai 2012). The beauty and uniqueness of their landscapes has attracted people to enjoy, appreciate and exploit for their needs. Recreational forest landscape is a combination of natural landscape and human made landscape. Geology, landform, vegetation, soils, water and fauna are the components of natural landscape. Whereas, all human made elements belong to human made landscape.

The existence of recreational forests in Peninsular Malaysia is quite often due to the presence of particular rock types and certain geological structures and geomorphologic features, and among most common rock forming recreational forests are hard sandstone and granite (Leman et al. 2007). Geological features such as limestone and rock outcrops (granitic rock and megacrystic granite) that display different texture from coarse to very coarse (photo 1) has attracted public to the recreational forest. Water flows on the hard geological surface of granite rocks and falls from the mountains/hills and rapids make the landscape in recreational forest very attractive. Waterfalls are very seems to be the main geological attraction in the recreational forest and suitable for recreation activities like bathing and swimming (Dony Adriansyah et al. 2013). Many countries have started to develop schemes for recognizing important geological landscapes within their national boundaries for educating the general public in geological and environmental matters (Eder & Patzak 2004).



Photo 1: An outcrop of granitic rock (a) and megacrystic granite with coarse to very coarse grained (b)

Landform is another character of recreational forest landscapes. Landform can influence the observer in visualize recreational forest. When viewing a landscape the eye tends to look around a scene, this applies in particular where landform is the dominant landscape influence (Forestry Commission 2011). The most prominent landform features have the strongest visual forces, and lesser forces relate to the minor features (Photo 2). Wonderful landforms such as waterfalls, rivers, hilly to mountainous terrain, the interesting and rock outcrops become attractions that make recreational forest area interesting and enjoyable.



Photo 2: A landscape with dramatic landform in the Mountain of Inas, Kedah, Malaysia.

Vegetation is the major landscape element for recreational forest. There are many types of vegetation in recreational forest, depending on the region where they grow. For instance, in Malaysia forest vegetation can be divided into seven types which are Montane-Ericaceous, Montane-Oak, Upper Dipterocarp, Hill Dipterocarp, Lowland Dipterocarp, Peat Swamp and mangrove forest (Table 1).

Table 1: Tropical Forest Types of Peninsular Malaysia

	Forest Name	Forest Description
	Montane-Ericaceous Forest	Located at above 1,500 meters altitude. Trees found at this forest type are small in size, gnarled and stunted. Forest floor mostly dominated by species from Ericacea family. Besides that, bamboos, ferns and mosses also can be found here.
	Montane-Oak Forest	This forest type can be found between 1,200 to 1,500 meters altitude. The main species found in this forest are <i>Mempening</i> , <i>Berangan</i> and <i>Medang</i> . Dipterocarp species are rare and only a few species can be found here such as <i>Keruing Gunong</i> and <i>Resak</i> .
	Upper Dipterocarp Forest	Forest located at 750 to 1,200 meters altitude. Among the species found in this forest are <i>Meranti Bukit</i> , <i>Damar Minyak</i> , <i>Bintangor</i> , <i>Keruing</i> , <i>Balau Gunong</i> , <i>Balau Gajah</i> and <i>Meranti Sarang Punai</i> .

	Forest Name	Forest Description
	Hill Dipterocarp Forest	Hill dipterocarp forest is the most extensive forest type in Peninsular Malaysia and exists at 300 to 750 meters altitude. The main species found are <i>Meranti Seraya</i> , <i>Keruing</i> and other <i>Meranti</i> 's.
	Lowland Dipterocarp Forest	Forest located below 300 meters altitude and consists of a vast variety of tree species. The main species found in this forest type are <i>Meranti</i> , <i>Balau</i> and <i>Kapur</i> (<i>Dryobalanops aromatica</i>).
	Peat Swamp Forest	Peat swamp forest formed on the peat soil with approximately 6m in depth. Among species commonly found in this forest area are by <i>Kempas</i> , <i>Bintangor</i> , <i>Meranti Paya</i> , <i>Ramin</i> , <i>Nyato</i> , <i>Geronggang</i> and <i>Resak</i> .
	Mangrove Forest	Characterized by its location which is situated in the coastal areas and experience low and high tides. The main species found in this forest is <i>Rhizophora spp</i> (bakau). The vegetation in this ecosystem is characterized by the unique root system known as stilt roots and pneumatophores as well as thick leaf structures. Matang mangrove forest is managed under sustainable forest management system and is recognized as the best managed mangrove forest in the world.

(Source: <http://www.forestry.gov.my>, viewed 29 December 2013).

Soils are also part of natural landscape of recreational forest. Soils in recreational forest have faced degradation due to recreation such as camping and hiking/trekking activities (Photo 3). Soil is exposed to direct recreational pressure, and the degree of change in its properties is the most objective criterion for assessing digression in recreation areas (Karpachevsky, 1981; Marphinina et al., 1984 in Siikamaki 2009). It is important that soil is easily eroded by water, wind, snow and ice. Careless recreation activities speed up the process of erosion by damaging the soil's structure and its normal resistance to erosion. In all situations, suitable physical and biological methods must be applied to protect the soil against accelerated erosion. Once it is exposed and eroded, it affects the visual quality of the park and reduces visitor experience as well as can cause injury to visitors. Thus, proper management and control are needed in order to avoid soil deterioration and exploitation in recreational forest.



Photo 3: Soils in recreational forest have faced degradation due to recreation such as camping and trail activities.

Watercourses such as rivers, waterfalls, and lakes are added value for recreational forest landscape (Photo 4). According to Janeczko (2009) the attractiveness of forest landscape is influenced not only by the number but primarily by the character of watercourses and water reservoirs. According to Smoleński (2007) in Janeczko (2009) it is the large diversity of ecotypes that determinates that watercourse as natural corridors and water reservoirs are visually one of the most attractive elements of forest landscape. This diversity also means contrasts in the natural landscape that, according to many authors, is an important criterion in choosing a place for recreation. It is difficult to point two elements in a landscape that would show more contrast and power of attracting tourists than forest and water. Therefore, the most preferred places for forest recreation are places located near watercourses and water reservoirs (Janeczko, 2002). Therefore, the quality of the water in recreational forests needs to be preserved.



Photo 4: Watercourses such as river, waterfall, and lake are added value for recreational forest landscape

Last, but not least, fauna of recreational forests is also part of landscape elements (Photo 5). Most people enjoy observing wildlife and many participate in recreational activities such as bird watching, insect collecting, photography, hunting and fishing, to name a few (University of California 2007). Amongst the insects that can be found in recreational forest are dragonflies' such as *Orchithemis pulcherrima* and *Neurothemis fluctuans* (Wahizatul et al. 2006). They can found along the habitat permanent gradient ranging from permanent running waters and lakes to small temporary rain pools (Corbet 1999). Forest mammals such as monkeys, otters, deer, rodents and rabbits are the ones most people know as wildlife. While birds add color, movement and sound to the forest and play crucial roles in the forest ecosystem by dispersing seeds, pollinating plants, and by eating insects and rodents (University of California 2007). Therefore, the management and visitor need to understand forest wildlife relationships and function and how to maintain or enhance them.

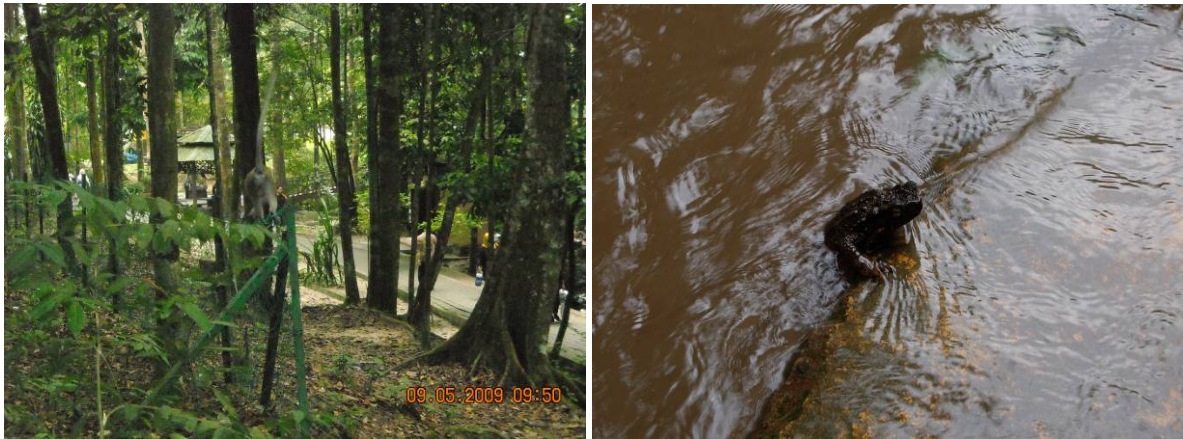


Photo 5: Fauna such as monkey and frog in recreational forest also part of landscape elements.

SUSTAINABILITY IN THE CONTEXT OF RECREATIONAL FOREST LANDSCAPE DEVELOPMENT

Basically, sustainability encompasses environment, future and equality with emphasis on the use of available resources wisely, especially in the context of planning, commitment and involvement of management and other stakeholders (Fatimah & Fauziah, 2007). It leads to the ability to meet the needs of the present generation without compromising the ability of future generations to meet their own needs and requirements (Kates et al., 2005). Therefore, to ensure the sustainability of the project development, it should not only benefit the present generation but also consider the needs of future generations.

From the perspective of landscape study, sustainability does not only cover environmental, social and economic issues, but also aspects of design, visual appeal, visual harmony, ecology, human well-being, culture and local identity. There are two main aspects emphasized here; first design and the protection of assets, and the relationship between ecosystem services and human well-being (Selman 2008). Looking at the landscape architecture and planning relationship, sustainability is more geared to the design that has a low impact on the physical and social environment and human (Dunnett & Clayden 2007).

According to Schutzki & Tripp (2007), sustainable forest landscapes should emphasize the aspects of preservation, conservation, protection of natural systems, natural function and environment quality care. The development must fit with the goal of building community capacity systems to provide landscape ecosystem services is good for the long term (Clark & Dickson 2003; Kates et al. 2001; NRC 1999, Turner 2008). Therefore, benefits to society both in terms of economy and healthy living should be a priority, while ensuring that natural systems such as the hydrological cycle and the food chain are not affected. Thus, recreational forest sustainability requires a deep observation of environmental carrying capacity, ecosystems, the importance of today's society and future community, visual quality and local identity as well as the landscape design itself.

The sustainability of recreational forest landscape has been strongly influenced by its environment where it always concerned with landscape ecology of spatial patterns and processes (Selman 2008; Farina 2006). From ecological perspective, a sustainable landscape refers to green infrastructure - i.e. biodiversity network of habitat patches and corridors - of sufficient size, quality and connectivity to facilitate species' life cycles, maintaining healthy and viable populations (Selman 2008). It also refers to soil and nutrient conservation, water quality, hydrology systems and vegetation (Haines-Young et al. 2006). Therefore, improper planning of recreational forest landscape (especially in term of man-made landscape elements) can affect the ecosystem and landscape ecology of recreational forest due to the fact that landscape is an ecology entity that is dynamic and can change according to situation and disturbance (Ismail & Mohd Sarofil 2005). Thus, it is necessary for the park management to study the environmental effects on recreational forest when developing the site in order to achieve sustainability. If human activity has a significant impact on the environment, it leads to environmental deterioration and creates unhealthy environment to living things.

Recreational forest landscape sustainability is also related to economic growth. Economic relationship of recreational forest refers to spontaneous benefit such as recreation activity that makes certain place interesting and has value to the public and country (Vollet et al. 2008; Selman 2008; Powell et al. 2002). Those economic benefits should be shared with local people in order to improve their quality of life. Sharing economic benefits will increase support from local people as well as help in increasing their socio-economic and cultural status.

Therefore, if local people's involvement in development process has been neglected by the management, it will affect the site sustainability.

Economic benefits of recreational forests must have a positive effect in long terms in recreational forest management by providing job opportunities, reducing poverty and social inequality and also increase social services to the local community (Jamieson & Noble 2000). Nowadays, landscape plays an important role in increasing economic value of the development projects such as housing and outdoor recreation. Numerous studies have shown that landscape development can add value to properties and increase their market value (Osman 2005). This is because almost all landscape is valuable to at least some "insider" groups, like environmental lovers (Selman 2008). Thus, a proper and systematic recreational forest landscape development will increase the value of nearest sites and indirectly benefit the local community and can ensure the sustainable use of recreational forest in the future.

For generations, parks including recreational forests have played an important role for people, and contributed to social and cultural aspects of their lives (Osman 2005). On the other hand, public plays an important role in ensuring recreational forest landscape sustainability since they are users of the site. Therefore, they must be involved in development process including in the decision making and access (Selman 2008; Moore-Colyer & Scoot 2005) in order to fulfill their requirements and to get full support from them. While these practices are necessary, however, they are not sufficient (Selman 2008). Nowadays, in Malaysia, public participation exercises do not represent real public opinion and public need, but lean towards one-way communication which does not make any sense in communication because when an authority organized any public participatory exercise they were always giving a brief of the development to the public without acquiring any feedback from the public (Ahmad 2001 in Mohd Yazid 2009).

Public participation (especially local community) in recreational forest landscape development process should be improved and increased. This is because landscapes have meanings to a spectrum of insiders and outsiders and may be integral to the construction of place and its *genius loci* (e.g. Scazzosi 2004). Since public has different meaning and understanding towards landscape (Olwig 2005), thus, enhancing public participation in planning and landscape design can make the development process of recreational forest landscape more effective and increase the understanding on landscape sustainability (Buchecker et al. 2003). Landscapes provide a powerful setting for "social" (e.g. Collins et al. 2007) and "sustainability" learning (Tabara & Pahl-Wostl 2007). Therefore, public participation in landscape recreational forest plans and design process is strongly necessary, since it can help to avoid injustice in decision making (Botes & Rensburg 2000).

Good management also plays an important role in sustainable recreational forest landscape development. Governance closely related with political sustainability that requires effective management structures, including "commons", for both the private and public domains (Selman 2008). This study believes that managers who have a good understanding of the importance of landscape and environmental issues will contribute to the recreational forest landscape sustainability (Mohd Kher 2012). This is because they can ensure that any decision making related to recreational forest landscape development that wanted to be made are correct and wisely implemented. While stable governance can ensure that landscape development requirements can be made in a proper strategy with high integrity and intactness.

Sustainable recreational forest landscape is also related to landscape aesthetic value. Aesthetic value influences people in reacting towards recreational forest landscape based on their experiences that has closer to landscape (Gobster et al. 2007). This is because people try to value or perceive recreational forest landscape through aesthetical value, based on what has been seen and how management is implemented on landscape. Selman (2008) claims that landscapes possess 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 we are conditioned to "read" it. A part of that, landscape aesthetics also has close relationship with ecological aspects that affecting by planning, design and management of natural sites (Gobster et al. 2007). In develop countries such as United States of America, Britain and other European countries; landscape aesthetic has been valued for public, economic and environmental importance (Brady 2003). For instance, housing areas that are closer or beside to recreational forest have higher value compared to housing areas located in urban area, owing to the landscape aesthetic value that the recreational forest has. By evaluating what aesthetic value scenic landscapes have for people, we can also explore on how people appreciate recreational forest landscapes (Gobster 2008).

Design aspects also need to take into account in recreational forest landscape development. The design must harmonize with the natural forest landscape. The design should also have its own character that portrays forest identity and may act as a tourism product beside recreation activity (Jacobs 1993). Therefore, the structural design (e.g. pedestrian walkways, stairs, signage, shelters, etc.) as well as buildings must have visual interaction with natural environment (Schneider 1981). On the other hand, the design also must have good combination

between natural environment and architectural aspects such as application of vernacular architecture (Schmid 1983). However, if the surrounding has high panoramic value, built elements must have good character, harmony and did not contradict with existing environment (Doczi 1994). Building and structural design depends on climate, temperature, light and color (Peter & Bouwen 1998). Therefore, those factors must be seriously considered during design process. Whatever design it is, the most important consideration is that structure and building design in recreational forest must show greater influences from environment (Ceballos-Lascurain, 1996: Walter 1987) and do not destruct existing environment (Edington 1986).

5. CASE STUDY – LANDSCAPE DEVELOPMENT IN BUKIT HIJAU RECREATIONAL FOREST, KEDAH, MALAYSIA

Bukit Hijau Recreational Forest was opened in 1959 and located in Baling, Kedah, Malaysia. The site is 45 km away from Baling Town, 42 km from Kulim Town, 45 km from Sungai Petani Town and 110 km from Alor Setar Town through Kulim–Baling Road. Facilities available include chalets, children playground, campsites, and football field, parking area, signages, food stalls and prayer room (Photo 6). Huts, rest areas and bridges were also built to cater for picnickers as well as campers. There were also developments for groups in team building, eco-tourism and group activities. There is a nature trail that leads to Gunung Inas (9 km), Gunung Bintang Utara (15 km), Bukit Baubak (15 km) and to Bukit Hijau (8 km). The wildlife around here is represented by elephants, tigers, tapirs, barking deer, grey long-tailed monkeys and squirrel plus variety of birds and wild-fowls.



Photo 6: Facilities available in Bukit Hijau Recreational Forest include signages, parking area, trails, chalets, children playground, campsites, football field, food stalls and prayer room.



Photo 7: Some of the designs that are quite similar with urban park accommodation designs in Bukit Hijau Recreational Forest.

Bukit Hijau Recreational Forest has been developed without landscape master plan, based on *ad hoc* and *insitu* approaches. From field observation, it was found that some facility design and locations that have been built in this park less harmony with existing environment, and does not reflect forest identity. Most of the design is quite similar to the design of urban park areas (Photo 7). If these situations continuously happen, it can result to the failure in achieving sustainable development.

Bukit Hijau Recreational Forest still maintains and keeps the existing forest vegetation, landform and geographical in original state. A lowland dipterocarp forest and the spectacular seven level cascading waterfalls are in good condition (Photo 8). This forest is located at 150 – 200 meter above sea level. The forest around this

area has been classified as Educational and Research Forest and there is a virgin jungle reserve plot nearby. A wide variety of flora of lowland dipterocarp forest such as meranti seraya, meranti tembaga, meranti melantai are found here. Tualang trees (*Koompassia excelsa*) with bee nests are also to be found in the park. There is a herb garden within the park. At the same time, ongoing conservatory projects by the Kedah Forestry Department, including planting rare local fruit trees and medicinal herbs around the foothill park, were also carried out. The department also has a plan to increase the herbs in the herb garden within the park to more than 100 species. A hectare of Tongkat Ali (*Eurycoma longifolia*) has also been planted by the department.



Photo 8: A lowland dipterocarp forest and the spectacular seven level cascading waterfalls are in good condition.

In terms of architectural design, it portrays Malay architecture (Photo 9). This is reflected by the roof design and materials used (wood and clay bricks). Color schemes that have been applied are green and chocolate that shows “cool” and “peaceful” (Brenda & Robert 1996). Those colors are suitable for forest environment and can influence user convenience (Arwed 1992). Enhancing local design and the use of local materials as well as natural colors is a good step since it reflects the environmental influences (Ceballos-Lascurain 1996; Walter 1987).



Photo 9: Enhancing Malay architecture with medium scale in recreational forest is encouraging due to it portrays local culture and in line with ecotourism concept.

In order to ensure the beauty of the environment, the management focuses more on site cleanliness such as litter collecting, sweeping pedestrian/walkways from dry/fallen leaves and toilets cleaning. While maintenance work for man-made landscape elements such as shelters, benches, rubbish bins, bridges, and signage was carried out when damages occurred. This approach has resulted in serious damages to some of the elements that cannot be used and degrade the environment (Photo 10). Therefore, it is necessary for the management to prepare and establish maintenance programme and schedule in order to full-fill sustainable concept that protects the environment from damages and destructions.

Looking at local community involvement, their participation is limited to foods and beverages selling activity only. However, the existence of Bukit Hijau Recreational Forest provides a chance to some local people to increase their socio-economic through fruits, handcrafts, swimming apparatus and food-beverages business.

They are not involved in the entire development process. The bulk of benefit goes to the private company that manages the accommodations, campsites and waste/litter collection. Therefore, the management should more proactive in finding ways to increase local community involvement, for example via “home stay” project, “agro tourism” and cultural activity. Moreover, local community representative must be appointed to influence the development process through Recreational Forest Development Community establishment. Through these measures they can share ideas, opinion, needs and full cooperation and commitment in conserving recreational forest at their area. Indirectly, landscape sustainability of recreational forest can easily be achieved.



Photo 10: Due to lack in landscape maintenance programmed and system, some of human made landscape elements in Bukit Hijau Recreational Forest cannot be used because of serious damages.

In terms of management, Bukit hijau Recreational Forest has good management due to it has been managed by Kedah Forestry Department. Kedah Forestry Department has professionals in forestry who are excellent in forest management. However, this department has lack of proper expertise and skill in site selection, planning, management and technical know-how in preparing and implementing a systematic working plan on landscape design, construction and management (Mohd Kher 2012; Chee 1986). This has resulted to less eco-design approach for some of their man-made landscape elements such as bridges, shelters and toilets. Therefore, it was suggested here that the management should appoint a landscape architect and landscape technicians for their expertise in built environment design and management. To form a special unit that focus on recreational forest development is also strongly suggested here. The unit must include forest officer, landscape architect, engineers, planner, ecologist and architect.

From field observation, author believe that the major threat to the Bukit Hijau recreational Forest sustainability is that it has been over developed to cater for the public as ecotourism site. Another threat is attitude of local picnickers in littering and doing vandalism without any consideration of the cleanliness of the park (Photo 11). Non systematic management such as cutting of hill slopes to make way for heavy machinery such as backhoe to reach the upper reaches of the waterfall is another threat due to its detrimental effect to the fauna and flora of the park. Furthermore, carrying capacity that has been ignored by the management also becomes a threat of the park. It was recorded that the park received 2000 visitors in public holiday, 500 visitors in weekend and almost 150 visitors in weekday. This has resulted to park crammed full and space conflict among visitors. The management should keep the park in the pristine state with minimum development.



Photo 11: Attitude of local picnickers in discarding garbage and doing vandalism without any consideration of the cleanliness of the park is a threat to the park landscape.

6. CONCLUSION

Forest landscapes provide lots of benefit to people which have improved the lives of all residents, even those living in cities far away from large tracts of forests. These benefits, collectively known as ecosystem services, include clean water and clean air, fish and wildlife habitat, flood protection, recreational opportunities, scenic beauty and economic benefits from forest products. Therefore, such area needs proper development planning and management. Thus, developing recreational forest landscape for recreation and ecotourism purposes is a better strategy in protecting their existence in the earth. This is because it covers three important component of sustainability which is environment, society and economy. It is important how development is carried out and how management is implemented for the park.

A recreational forest consists of varied of landscape types. Their diversity is valuable and need to be protected for human livelihoods and well-being, climate stability and biodiversity conservation. Since recreational forest is a space where outdoor recreation and ecotourism activities are carried out, it is always exposed to environmental degradation. Without proper development planning, it will affect the balance of nature such as soil, water, air and climate, plants and animals, diversity, characteristic features and beauty and the recreational value of nature as well as the existing and foreseeable land uses. Therefore, landscape planning need to be prepared for the areas concerned in order to maintain and regain ecological integrity and enhance human well-being towards sustainability. It is also necessary to ensure that the proposed man-made landscape elements harmonize with the existing forest environment.

Recreational forest landscape development in Bukit Hijau Recreational Forest, Kedah, Malaysia is successful in conserving forest landscape in good condition. However, the area is still weak in implementing sustainable landscape development and needs an improvement. The reasons for that are improper planning and staffs low understanding, insufficient supervision and visitor's attitude. If there are no constructive actions taken, sustainable landscape development is quite difficult to achieve. Therefore, immediate actions need to be carried out, such as encouraging staff to attend related courses and seminars regarding sustainable landscape development, increase staff numbers especially in the field of landscape and built environment, focus on landscape design and provide environment education to the visitor.

Finally, this study shows that the development of recreational forest landscape meets the concept of conservation but fails to fulfill the concept of sustainability. Thus, knowledge and understanding on the concept of forest landscape sustainability need to be improved in recreational forest landscape development process for future generation and our fragile forest environment. Cooperation from all party is needed in ensuring sustainable landscape development. All levels of public including politicians, professionals, supporting groups, local community and recreational forest users should play their own role for the sake of future generations.

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