

## **Tragedy Of The Commons In Ecotourism: A Case Study At Kenyir Lake, Malaysia**

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*Tourism is the only sector in which natural environment plays a substantial role. Nowadays, the interaction between ecotourism and the natural environment is generally inter-dependence; ecotourism holds on to natural environment for resources, and in order to survive the environmental threat, natural environment in turn, depends on ecotourism. In human society, the selfish use of common resources can lead to catastrophic consequences, a situation known as the 'tragedy of the commons' (TOC). More often than not, natural environment as the common pool resource (CPR) is overused and degraded, as is the unfortunate fate of most TOC. Thus, this paper explains this particular circumstance in the context of Ecotourism in Malaysia, specifically in Kenyir Lake. First, it introduces and details the TOC. before exploring the possibility of Kenyir Lake being a CPR issue. Finally, this paper attempts to add an ethical dimension (also known as Environmental Culture) into the debate on the interaction between tourism and CPRs based on findings established on Kenyir Lake.*

**Key words:** ecotourism, tragedy of the commons, common pool resources, environmental culture

### **Introduction**

Tourism destinations are considered to be attractive and appealing from various sources; some are man-made attractions with cultural/historical/modern backgrounds while other destinations rely on their natural assets which include beaches, lakes, forests, mountains and general scenic beauty (Huybers & Bennett, 2003). The fact that the environment, both natural and cultural, is the very resource based upon which most ecotourism is founded, is widely recognized (Jim, 2000). The natural environment is the main basis upon which a nature-based tourism destination, as a collective unit, competes with rival destination regions (Huybers & Bennett, 2003).

Nevertheless, the interaction between nature-based tourism and the natural environment is generally interdependence; tourism is often highly dependent on environmental quality (Pintassilgo & Silva, 2007) and nature depends on the tourism business to protect the quality of the region's environmental attractions (Huybers &

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Bennett, 2003). Tourism is principally the encounter of a mainly known and stable population (the residents) with a generally unknown and changing population (the tourists) (Bimonte, 2008). Even though the ecotourism business is reliant on nature, it does not automatically translate into the cooperation between those businesses with respect to environmental protection (Huybers & Bennett, 2003). Consequently, tourism generates impacts associated with development of infrastructures, movement of people and vehicles and over-utilization of natural resources (Pintassilgo & Silva, 2007).

In human society, selfish use of common resources can lead to disaster, a situation known as the 'Tragedy of the Commons' (TOC) (Wenseleers & Ratnieks, 2004). However, in tourism literature, debate regarding TOC has received limited attention (Holden, 2005). Thus, this paper will discuss the TOC in the scope of ecotourism, specifically in Kenyir Lake, Terengganu, Malaysia.

### **Tragedy of the Common**

The term 'Tragedy of the Commons' (TOC) was first introduced by Garrett Hardin (1968) wherein the essential idea is that common resources, such as oceans, rivers, air, and parklands, are subject to massive degradation (Feeny, Berkes, McCay, & Acheson, 1990). In his essay, Hardin (1968) asks readers to picture a pasture 'open to all' in which each herder receives large benefits from selling his or her own animals while facing only small costs of over-grazing (Huybers & Bennett, 2003). Such an arrangement may work reasonably well until the number of animals exceeds the capacity of the pasture. Nonetheless, each herder is still motivated to add more animals since the herder receives all of the proceeds from the sale of animals and only a partial share of the cost of over-grazing (Huybers & Bennett, 2003). Hardin Page 3, (1968) then concludes:

*"Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all"*

Although Hardin is referring to global concepts such as carrying capacity, his observations about resources held in common are considered by many as a definitive insight (Feeny, *et al.*, 1990). The TOC arises when it is difficult and costly to exclude potential users from the Common Pool Resource (CPR) that yields finite flows of benefits- as a result, those resources will be exhausted by rational, utility-maximizing individuals rather than conserved for the benefit of all (Huybers & Bennett, 2003).

### **Common Pool Resource**

Following Hardin's (1968) seminal essay on the TOC, numerous studies have been conducted and an international association formed on the subject of 'common pool resources' (CPR) (Wenseleers & Ratnieks, 2004). Common-property resources include fisheries, wildlife, surface and groundwater, range, and forests (Feeny, *et al.*, 1990). CPR exists wherever natural resources or human-made facilities exist (Huybers & Bennett, 2003). CPR also shares two important characteristics; (i) excludability (where excluding users are costly or virtually impossible) and (ii) subtractability (each user is capable of subtracting from the welfare of other users) (Feeny, *et al.*, 1990). Feeny (1990) also mentions four types of resources:

- i. Open Access - the absence of well-defined property rights. Access to the resource is unregulated, free and open to everyone. Many offshore ocean fisheries before the twentieth century and the global atmosphere are some examples.
- ii. Under private property, the rights to exclude others from using the resource and to regulate the use of the resource are vested in an individual (or group of individuals such as a corporation). Private-property rights are generally recognized and enforced by the state. Unlike the entitlement of rights under open access, private-property rights usually are exclusive and transferable (Regier and Grima, 1985). Examples include forests and rangelands that are held privately.
- iii. Communal Property - the resource is held by an identifiable community of interdependent users. These users exclude outsiders while regulating its use by members of the local community. Within the community, rights to the resource are unlikely to be either exclusive or transferable; they are often rights of equal access and use. Some inshore fisheries, shellfish beds, range lands, and forests have been managed as communal property; similarly, water-users associations for many groundwater and irrigation systems can be included in this category. The rights of the group may be legally recognized. In other cases the rights are *de facto*, depending on the benign neglect of the state.
- iv. State Property, or state governance – indicating that the rights to the resource are vested exclusively in the government, which in turn makes decisions concerning access to the resource and the level and nature of exploitation. Examples include forests and rangelands held by the government or crown-owned, and resources such as fish and wildlife that may be held in public trust for the citizenry. The category of state property may refer to the property to which the general public has equal access and use rights such as highways and public parks. The nature of the state property regime also differs from the other regimes in the sense that, in general, the state, unlike private parties, has coercive power of enforcement.

Although the nature of the property-rights regime under which the resource is held is important, that information is insufficient for one to draw valid conclusions concerning behavior and outcomes (Feeny, *et al.*, 1990). Besides, there is no certainty that these management regimes will ensure resource conservation (Holden, 2005).

### ***Tragedy of the Common in Tourism***

In the case of tourism, resources utilised for tourism are also used by the local population and many others are collectively shared in everyday life (Briassoulis, 2002). Both (tourists and local people) are probably internally divided into sub-communities, each with its preferences, interests and subjective needs, who most of the time have to reach an agreement on how to use and/or share simultaneously the local resources and how much should they be exploited (Bimonte, 2008). These resources are used, on one hand, by tourists in common with other tourists and, on the other hand, for tourists in common with other activities performed by the locals (Briassoulis, 2002). In some cases, tourists and local people may have different preferences and attitudes and, therefore, want to use the resources in different ways or for alternative purposes (Bimonte, 2008). When the users have different attitudes or expectations toward the resources, conflicts may tend to arise and welfare and environmental degradation problems can occur (Bimonte, 2008).

CPR problems often arise in the course of managing tourism resources, but in certain circumstances these problems can be overcome (Huybers & Bennett, 2003). Users of CPR are assumed to be short-term, profit-maximizing actors who have complete information and are homogeneous in terms of their assets, skills, discount rates and cultural views (Huybers & Bennett, 2003). Thus, anyone can enter a resource and take resource units (Huybers & Bennett, 2003) causing resources to be overused and degraded, as is the unfortunate fate of most CPR (Wenseleers & Ratnieks, 2004). In the case of tourism, it is implicitly related to the number of tourists visiting a destination (Bimonte, 2008). In his article, Hardin (1968, Page 3) further points out:

*“The National Parks present another instance of the working out of the tragedy of the commons. At present, they are open to all, without limit. The parks themselves are limited in extent - there is only one Yosemite Valley - whereas population seems to grow without limit. The values that visitors seek in the parks are steadily eroded. Plainly, we must soon cease to treat the parks as commons or they will be of no value to anyone.”*

In the context of tourism, Briassoulis (2002) in his review paper has suggested factors that cause the “tragedy” to occur. In his study, he proposes goals, principles, and elements of policies for the management of CPRs. A different study by Huybers and Bennett (2003) investigates the environmental cooperation between firms at nature-based tourism destinations using the Tropical North Queensland Australia as their case study. They mention that the “tragedy” can be avoided, provided that self-regulatory governance regime, based on strong internal institutions complemented by informal monitoring and enforcement, is particularly effective at nature-based tourism destinations. In a further study done in Asia specifically in Nepal, Agrawal and Gupta (2005) focus on the participation of local people in the management of CPR. Their study proves that more powerful, better-off local groups tend to have greater participation in the management of CPR even though sponsored by the government. In another similar study done in a village which neighbours Taman Negara, Daim, Bakri, Kamarudin and Zakaria (2012) also look into community participation where it shows that the attitudes of the village community are generally positive towards community participation.

In a different study, Bimonte (2008) has based his review paper on the game theory framework, demonstrating why an unsustainable path may emerge even when both players (tourists and local people) prefer preservation to exploitation. He, like most of the authors, again addresses some policy issues to prevent the dreaded result emerging from non-cooperative behavior, from yielding. However Bimonte (2008, Page 463) concludes that:

*“It is up to the local community to move first, using regulatory and normative instruments rather than traditional economic tools. Residents have the prime responsibility for the typology of tourists that visit their territory and the activities they are allowed to perform.”*

In another study by Moore & Rodger (2010), they derive a list of enabling conditions required for the sustainability of CPR and its applicability in a Whale Shark Tourism in Australia. In this study, they again emphasize on the importance of having a good governance to manage the CPRs. Yusof, Said, Osman & Daud (2010) also conduct a comparable study, in which they try to investigate whether resort operators in Kenyir Lake adopt certain organizational culture that is harmonious to the environment. They have found that most resort operators implement an ecologically

friendly approach in conducting business. Like most of the authors, they propose that new policies should be introduced to enhance environmental protection.

However, Holden (2005) in his review paper, tries to relate environmentally ethical issues underpinning the behaviour of tourism users, specifically regarding the resource conserving behavior (RCB). He discovers that the behavior of stakeholders towards nature, particularly entrepreneurs, tourists, governments and local communities, will be influential in determining the sustainability of CPRs. The focus of this paper would be on Kenyir Lake as a potential CPR as it matches the characteristics of CPR.

### ***Tragedy of The Common in Kenyir Lake Malaysia***

In Peninsular Malaysia, the ‘Tragedy of the Common’ also occurs in one of the National Parks; *Taman Negara, Pahang*. Taman Negara is situated at the center of the Peninsular Malaysia which covers three states- Pahang, Kelantan and Terengganu (Daim, *et al.*, 2012). The ease of accessibility to Taman Negara as many other national parks due to the improvement of transport infrastructure has led to a range of problems associated with their resource over-use (Holden, 2005).

In this paper, our focus will be on Kenyir Lake, one of the two gateways to the national park. Being the biggest man-made lake in Malaysia, Kenyir Lake shares a common characteristic of common pool resources (CPR), as part of it is located within the national park where protected areas known as the gene pool, rich with its biodiversity and important for conservation and protection of species are found (Daim, *et al.*, 2012). Thus, any one person, apart from the Natives, or *Orang Asli* will be considered as trespassing the protected area if they enter the area without obtaining the permission from the management agency (Daim, *et al.*, 2012).

In developed countries, national parks are founded upon what, in modern times, has become an apparently conflicting rationale, attempting to both conserve nature and provide open access to urban dwellers for recreation (Holden, 2005). Quoting Hardin (1968):

*“The tragedy of the commons reappears in problems of pollution. Here it is not a question of taking something out of the commons, but of putting something in -sewage, or chemical, radioactive, and heat wastes into water.”*

In many tourism destinations, resort operators are accused as the main contributor for pollution (Hillary, 2000). Kenyir Lake as shown in Figure 1, matches “Tragedy of the Common” following Hardin’s (1968) descriptions, where; (1) the lake is a pasture ‘open to all’, (2) in which each resort serves as a herder (3) it receives large benefits from selling their services, (4) while facing only small costs of operation. Here, Kenyir Lake and the natural resources constitute the “Common Pool Resources”. This system may properly work until the number of tourists surpasses the carrying capacity of the lake.

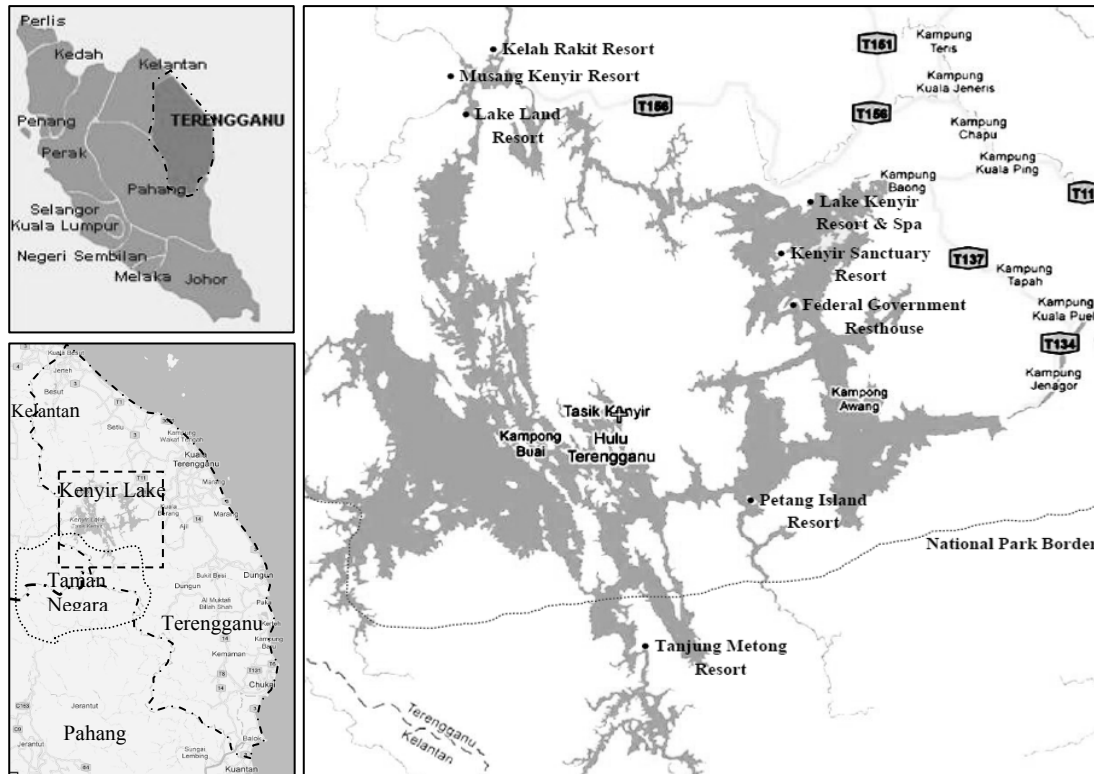


Figure 1: Location of Kenyir Lake which borders Taman Negara Malaysia.  
(Source: Adapted from [www.wikimapia.com](http://www.wikimapia.com))

The rational man (resorts) finds that his share of the cost of the wastes he discharges into the commons is less than the cost of purifying his wastes before releasing them (Hardin, 1968). Problems also arise from what is put into CPRs as a by-product of tourism in the form of water, noise, aesthetic values and air pollution (Holden, 2005). The disposal of untreated human waste by the resorts into the lake is one of the examples of TOC that occur in Kenyir Lake. Yusof, *et al.*, (2010) mention that out of 6 resorts operating in Kenyir Lake, only 2 resorts incorporate waste recycling activities while the remaining settles for rubbish disposal.

When the number of resorts increases, so do the visitors. Indeed as highlighted by Lynn and Brown, (2003) it has become evident that failure to manage properly the increasing number of tourists who visits protected areas has led to a decline in biological diversity and exploitation of natural resources. For the following items; usage of low energy consumption devices, water-saving practices, and recycled materials, Yusof, *et al.*, (2010) establish that out of 6 resorts, only 3 resorts claim to practice these environmental friendly practices.

The human-wildlife conflicts often occur to the local people living in villages neighboring the protected areas (Daim, *et al.*, 2012). Areas surrounding Taman Negara have experienced threat, especially from opening additional land for agriculture, industry or housing, and carrying out logging in forest reserves in upstream states, which affect the water catchment areas and subsequently reduce the amount of water in a state to which the river flows (Saleem, 2005). In some cases, the fish pond projects owned by the local community also pose a threat to the lake by the intrusion of exotic species from these ponds (Daim, *et al.*, 2012).

## Results And Discussion

Table 1 explains the CPR features of Kenyir Lake. Based of the four types of CPR by Feeny (1990), we can conclude that Kenyir Lake is under Communal Property Resources where the resource is held by an identifiable community in which they exclude outsiders while regulating its use by members of the local community. As Bimonte (2008) mentioned, residents have a primary responsibility for the typology of tourists who visit their territory and the activities they are allowed to perform. This is because most of the tourism activities are operated by the local people.

Table 1: Kenyir Lake, Terengganu, Malaysia as a CPR issue.

	<b>CPR Feature</b>	<b>Kenyir Lake Tourism Attribute</b>
1.	Permeable boundaries Mobile Resource	Mobile and migratory
2.	Potential impacts on resource sustainability	Resources in lakes and forests, therefore, it is difficult to prevent impact by tourists and local people
3.	Subtractability (each user is capable of subtracting from the welfare of other users)	“Too many” tourists and tourists boats can impact tourists’ experiences
4.	Excludability (where excluding users are costly or virtually impossible)	Excluding the ‘Orang Asli’ or the aborigines from entering the Taman Negara is impossible
5.	Users are short-term, profit-maximizing actors who have complete information and are homogeneous in terms of their assets, skills, discount rates and cultural views	Referring to the tourists as one of the users, they share common preferences, interests and subjective needs.

In the case of Kenyir Lake, resources utilised for tourism are also used by the local population. However, there is not much conflict of interest between the tourist and local community, because when it comes to employing staff, the resorts would give priority to locals (Yusof, *et al.*, 2010). Successful conservation in resorts involves the participation of staff at all levels, from the management to engineering, technical and service employees (Jim, 2000). In fact, it is the stable population (local people) who will have to live and cope with whatever is left over, while the tourists have the chance to move on to a new destination (Bimonte, 2008).

## Future Study

Previous literature has shown proof that most of the studies concerning TOC and CPR have placed focus on the goals, principles, policy issues, the list of condition and local participation for the sustainability of CPR. A study done by Holden (2005) and Yusof *et al.*, (2010) serves as an expansion to this genre of study, where the paper proposes for future study an ethical dimension, known as environmental culture which should be used as a means to cope with the interactions that take place between CPR and tourism.

Nature-based tourism has been a fast-growing segment in the international tourism market (World Travel and Tourism Council, 1998). Such alternative tourism activities, if not properly understood and managed, could usher in habitat degradation

(Jim, 2000). The degradation of resources however, is not only a matter of number, but also of attitude where it depends on the behaviour (typology) more than on the number of tourists (Patterson, Niccolucci, & Bastianoni, 2007). Accepting that the activity of tourism can have negative consequences for CPRs, the challenge, therefore, lies in the best possible measure to arrest or mitigate them (Holden, 2005).

Accordingly, there is evidence to suggest that an environmental ethics already has a foothold within the tourism market (Holden, 2005). The influence of the conservation ethic in the framework of reasoning of tourism's interaction with the environment is emphasized by the World Tourism Organisation (WTO) (Holden, 2005). As Goodpaster (1998) suggests, ethics are about human action and their moral adequacy. Environmental ethics (in this paper Environmental Culture), is concerned with the collective action of humans towards nature (Holden, 2005). In the view of Westra (1998), a true environmental ethic requires that we pass beyond an anthropocentric viewpoint of the world to establish who, or what may possess moral standing and rights.

Environmental ethics is concerned with establishing the laws or agreements that enable 'what ought to be' statements of the human-nature relationship to be made in response to 'what is' statements (Holden, 2005). In addition, institutions can be either formal if they are sanctioned through formally established procedures, or informal if they are enforced spontaneously within the group (Huybers & Bennett, 2003). Jim (2000) and McMinn (1997) mention that: Environmental ethics and minimum impact behaviour should be fostered in the programmes; facilities should not detract from the intrinsic values of the nature experience which could revolve around the environment rather than humans.

## **Conclusion**

There are many settings in the world where the tragedy of the commons has occurred and continued to occur – ocean fisheries and the atmosphere being the most obvious (Huybers & Bennett, 2003). The conventional CPRs comprise of air and the atmosphere, water resources, oceans, ecosystems, fisheries, forests, wildlife, grazing fields, and irrigation systems (Wenseleers & Ratnieks, 2004).

In the contexts of TOC and CPR in ecotourism, the roles of resort operators are vital in tackling environmental issues at local level, in particular, the area where they operate (Yusof, *et al.*, 2010). Whenever possible, residents should find an agreement on which resources to share and open up to the "interference" of tourism (front stage regions), in what forms and under what conditions, and which resources, instead, should be set aside as belonging to inalienable spheres of life for the local communities (backstage regions) (Bimonte, 2008).

However, whilst it can be argued that the increase in demand for 'eco' and 'nature' tourism is reflective of a growth in 'green consumerism', we know little about the extent to which consumers who purchased nature-based tourism holidays do so because they feel they are making a genuine contribution towards conservation, or because they simply want to enjoy nature and visit 'new' or 'unspoilt' places (Holden, 2005). In these cases, the preservation of tourism resources asks for the simultaneous cooperation of the different players (a beach will be cleaned only if all the users cooperate towards this end)(Bimonte, 2008). It has been argued that the behaviour of all stakeholders towards nature, not only the tourist entrepreneurs and tourists but also governments and local communities, will be influential in determining the sustainability of CPRs (Holden, 2005).



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