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Environmental Impacts of Tourism in Protected Areas

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Abstract

This paper examined negative and positive effects of tourism activities in protected areas. The positive effects include the creation of employment, the increase in the economic levels, promotion of conservation of natural spaces, minimizes the migration of the local population, and improvement in the economic and socio-cultural level of the local population, the commercialisation of the local products, exchange of ideas, costumes and the sensitization of the tourist and local population for protection of the environment. Tourism is an intensive sector of employment and is one of the few alternatives to the destruction of environment caused by the technological change, the globalisation process and the reduction of the working time. Negative effects include the rising of consumption of ground (space), water, energy, destruction of landscapes with the creations of new infrastructures, the rise in the production of disposals (wastes), the alteration of ecosystems, the introduction of exotic species of animals and plants, the loss of traditional habits (hard work to idleness), the increase in prostitution (sex tourism), the narcotic traffic, more forest fires and the increase in the prices of goods and services (e.g. houses, labour around tourist destination). Tourism affects the environment of a protected area in any destination either directly, indirectly or cumulatively which could determine the sustainability of tourism and its related activity in the protected area. Tourism activities can adversely affect the environment in case of mass tourism, pollution by lodges, human encroachment due to tourism activities. Relevant stakeholders in the tourism industry need to ensure that the environment is protected. Protected areas both marine and inland are facing numerous environmental challenges majority of which are caused by human activities.

Keywords: Environment, Impacts, Protected Area, Sustainability, Tourism

1. Introduction

A protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN, 1994). There are six categories of protected areas: Strict Protection Areas (scientific reserve, biological, marine sanctuary), National Parks, Natural and Cultural Monuments, Habitat Management Areas, Nature reserves (forest reserves, forest model) and Protected Landscapes (via panoramic, ecological corridor and recreational areas).

The industrialization, urbanization, and unsustainable agriculture practices of human society are considered to be having a serious effect on the environment. Ecotourism is now also considered to be playing a role in this depletion. While the term ecotourism may sound relatively benign, one of its most serious impacts is its consumption of virgin territories (Kamuaro, 2007). These invasions often include deforestation, disruption of ecological life systems and

various forms of pollution, all of which contribute to environmental degradation. The number of motor vehicles crossing the park increases as tour drivers search for rare species. The number of roads has disrupted the grass cover which has serious effects on plant and animal species. These areas also have a higher rate of disturbances and invasive species because of all the traffic moving off the beaten path into new undiscovered areas (Kamuaro, 2007). Ecotourism also has an effect on species through the value placed on them. "Certain species have gone from being little known or valued by local people to being highly valued commodities. The commodification of plants may erase their social value and lead to overproduction within protected areas. Local people and their images can also be turned into commodities" (West, 2006). Kamuaro brings up a relatively obvious contradiction, any commercial venture into unspoiled, pristine land with or without the "eco" prefix as a contradiction in terms. To generate revenue you have to have a high number of traffic, tourists, which inevitably means a higher pressure on the environment.

It is only in the last three decades that the seriousness of the environmental impact of tourism on a global scale has become more evident. Globally, air travel and the use of vehicles for travel contribute to the increasing sources of greenhouse gas emissions, biodiversity loss resulting from habitat loss, consumption of resources, and degradation of various types of environments, such as coastal areas, mountains and wilderness areas, rural areas, and small islands. All these are translated into environmental changes affecting air, land, and water (Wong 2002).

The environmental impacts of tourism have distinct geographical patterns with specific areas identified in terms of the type, extent, and intensity of the impacts (Mieczkowski 1995). On a global scale, the major areas are in Western Europe – the Mediterranean, the Alps, and the coasts of the North Sea and Baltic Sea. The Mediterranean Basin is the most touristically overdeveloped region in the world, accounting for 30 percent of international arrivals (EEA 2001). The spatial pattern or intensity of environmental impacts can be complicated by its temporal intensity (seasonality). Normally, seasonal impacts provide a chance for nature to recover from damage suffered during the tourist season (Mieczkowski 1995). But impacts can also proceed in different dimensions. They can be cumulative in terms of space and time, leading to a threshold and a critical level of negative impact. For example, tourism-related air and road travel adds to the cumulative impact of global climate change, which in turn affects tourism negatively, especially in alpine areas (Elsasser and Burki 2002) and on many small islands (Nurse et al. 2001). On the other hand, economic recession can sometimes slow down environmental impacts. For example, the environmental impacts of Japanese leisure and tourism would have been more severe if not for the collapse of the country's ''bubble economy'' in the 1990s, leading to a slowdown in the development of resorts, golf links, skiing grounds, and hotels (Gielsen, Kurihara, and Moriguchi 2001).

Environmental impacts are complex in nature (Mieczkowski 1995; Holden 2000). Most impacts are non-linear in character, while others build up slowly and cumulatively, resulting in long-term dramatic changes that are not evident until it is too late. Others cause a disproportionately high rate of change initially and then level off. There are also complications from spatial and temporal discontinuities of impacts (that is, where and when the impacts occur). Although most tourist phenomena are highly localized, their effects can be felt far away, as in the case of air, water, and noise pollution related to tourism activities in pristine nature reserves. Cohen (1978) suggested that environmental impacts are dependent on: (1) the intensity of tourist site use and development; (2) the resilience of the ecosystem; (3) the time-perspective of the tourist developer; and (4) the transformational character of tourist development. Based on research in Australia, Sun and Walsh (1998) provided additional details on these factors. The nature and degree of environmental impacts appeared to depend on the interaction among: (a) usage rates (including both intensity and frequency); (b) the type of recreational activity; and (c) site-specific vegetation, climate, and edaphic factors. Most of the studies reviewed by Sun and Walsh (1998) showed that the degree of impact increased with the level of recreational use, although not always. Vegetation and soils had different impact thresholds for recreational use. A full understanding of how different factors influenced the resulting environmental impacts remain unclear, except that, overall, impacts do increase with use.

Many protected areas are not equipped to handle international tourism. Either because they are deficient of tourism management capabilities, staff members, language ability for foreign guests, insufficient number of staff lacking expertise in tourism, marketing, service quality evaluation and international eco-tourism (Dearden & Rollins, 2002). Expertise in service quality management is particularly needed. Managers in protected areas must be prepared to

provide the best possible experiences to the visitors while at the same time insure that the environment does not incur the negative impacts brought about by certain forms of behaviour (Buckley, 2002).

2. Classifications of Impacts of Tourism on the Environment

As the impacts of tourism on the environment are varied and complex, there is a need to classify them for various reasons, such as research design and analysis, project appraisal, policy development, and programme applications (Hunter and Green 1995). A reductionist approach is evident in recent research on the environmental impacts of tourism and this can take various forms. The environmental impacts of tourism can be considered in terms of: broad or general categories that relate closely to the categorization of tourist assets or attractions found in physical, biological, socioeconomic, natural, built, and cultural environments; the nature of the impacts over time or space, including: short-term or long-term impacts (ESCAP 1992); positive or negative impacts; local, regional, and even global impacts; and direct, indirect, or induced impacts. To some extent these reflect the characteristics of the tourism industry; and environmental components, some examples of which include approaches by Mathieson and Wall (1982) and Mieczkowski (1995) that focus on ecosystems to understand negative environmental impacts; Ceballos-Lascura' in's (1996) classification of direct tourism impacts on geological exposures, minerals and fossils, soils, water resources, vegetation, animal life, sanitation, landscape aesthetics, and the cultural environment; and GFANC's (1997) identification of seven ecosystems impacted by coastal tourism activities alone. Genot 1997 and Wong 2002, give a summary of adverse impacts on the natural environment to include Pressure on natural resources (Energy depletion, Water supply, Land use and Soil erosion), Harm to wildlife/habitat and biodiversity loss (Trampling and clearance of vegetation, Loss of forest cover, Disturbance to wildlife, Damage to coral reefs, Damage to species) and Pollution (Air pollution, Untreated wastewater, Solid waste and litter and Noise pollution).

3. Types of Environmental impacts caused by Tourism in Protected Areas

Areas with high-value natural resources, like oceans, lakes, waterfalls, mountains, unique flora and fauna, and great scenic beauty attract tourists and new residents (in-migrants) who seek emotional and spiritual connections with nature (Kreag, 2001). Environmental impacts arising from tourism in protected areas fall into three categories: Direct, indirect and Cumulative impacts.

Direct impacts are caused by tourism itself to protected areas. This type of impact is generally easy to inventory, assess, and control than the indirect impact, since the cause and effect relationship is usually obvious. This affects directly the protected area and such an impact could be visible and conspicuous. An example is a newly constructed lodge in a protected area providing employment to the locals.

Indirect impacts (also known as secondary, tertiary and chain impacts) are usually linked closely with tourism, and may have more profound consequences on the environment than the direct impacts. Indirect impacts are more difficult to measure, but can ultimately be more important. This is because they are usually invisible and neither conspicuous nor explicit. They are usually on the background for example a farmer selling his produce to the hotel, when probably he has no interest on tourism.

Cumulative impacts is the process of cumulative environmental change as a result of tourism in protected areas may arise from many type of events such as single large event e.g., a group of many tourist vans trailing the wildebeest migration, multiple interrelated events, catastrophic sudden events e.g.,forest fires destroying wildlife and incremental, widespread, slow change for example a lodge having a poorly designed culvert or drainage system thereby affecting the environment in the protected area.

These three groups (direct, indirect and cumulative) can be further broken down according to their nature, as follows positive and negative, random and predictable, local and widespread, temporary and permanent and short-term and long-term impacts.

Positive and negative environmental impacts in a protected area are usually either positive or negative. Although some impacts can positively affect some people and negatively affect others in the same environment. For example, construction of a lodge in the protected area may result to job opportunities for the locals, but may have been

constructed on a wetland, thereby affecting the environment.

Random and predictable impacts which entails the preliminary analysis of an environmental impact assessment. It is useful to distinguish between assured or highly probable impacts, and more random or unpredictable ones which have a low probability of occurring but which nevertheless may have serious consequences for the environment in the protected areas. For example, in a country with a large, densely settled population, it is reasonable to predict that the construction of a hotel or lodge through unsettled areas will result in population migration, whereas incidents such as accidental pollution, fire, or spillage of toxic products are, by nature, unpredictable.

Local and widespread impacts whereas local impacts include effects in the immediate effect caused by the locals in the protected area, such as sand harvesting or mining minerals while widespread impacts can occur many kilometers from the protected area e.g., forest fires caused by humans as previously experienced in Australia. Fires in protected areas can cause untold damage to both flora and fauna. These impacts are often linked to indirect effects that arise over the medium or long-term existence of the protected area and include the influx of settlers and deforestation. Protected areas in Kenya usually experience local impacts where locals struggle to co-exist with wildlife and tourists.

Temporary and permanent impacts are those whose occurrence is not lasting, and which will eventually reverse themselves, the affected system having returned to its previous state. An example of this type of impact might be the trampling of grass during off-road driving in the protected areas; it recovers after a few weeks, to the point where no change from the original state is observable. Permanent impacts on the other hand are those which are irreversible-the affected system will not return to its previous state on a human timescale e.g., the destruction of a mangrove forest at the Kenyan Coast.

Short- and long-term impacts are those which appear during or shortly after a tourism activity in a protected area. An example of short-term negative impact in a protected area could be off-road driving where an ecosystem could recover in a matter of weeks. Long-term impacts may arise during a tourism activity, but many of their consequences appear during the operational phase, and may last for decades. An example of long-term negative impact could be forest fires or toxic waste spillage in a marine environment for example the oil spillage that occurred in the USA, which could have an impact for years.

4. Causes of Environmental impacts in Protected Areas

Environmental impacts caused by tourism are as a result of the dynamic interplay of socio-economic, institutional and technological activities. Population is an important source of development, yet it is a major source of environmental degradation when it exceeds the threshold limits of the support systems. Unless the relationship between the multiplying population and the life support system can be stabilized, development programs, howsoever, innovative are not likely to yield desired results. Population impacts on the environment primarily through the use of natural resources and production of wastes and is associated with environmental stresses like loss of biodiversity, air and water pollution and increased pressure on arable land. Tourism development near a protected area can increase the population in the area due to the impression of the availability of job opportunities. Mass tourism also results to high numbers gathering in a destination and in this case a protected area hence causing untold damage.

Poverty is said to be both cause and effect of environmental degradation. It still remains a problem at the root of several environmental problems. The circular link between poverty and environment is an extremely complex phenomenon. Inequality may foster unsustainability because the poor, who rely on natural resources more than the rich, deplete natural resources faster as they have no real prospects of gaining access to other types of resources. Moreover, degraded environment can accelerate the process of impoverishment, again because the poor depend directly on natural assets. Acceleration in poverty alleviation is imperative to break this link between poverty and the environment. Poverty is a social factor that can threaten the wildlife within a protected area when things e.g., logging, poaching etc emerge.

Urbanization is an issue that has threatened the protected areas in Kenya. The country boasts of having a national park in the city, but urbanization has affected the environment in the protected area. Human encroachments have threatened to extinct migratory routes and breeding grounds. Lack of opportunities for gainful employment in villages and the ecological stresses is leading to an ever increasing movement of poor families to towns (rural – urban migration). Mega

cities are emerging and urban slums are expanding. There has been an eightfold increase in urban population over 1901-1991. It has widened the gap between demand and supply of infrastructural services such as energy, housing, transport, communication, education, water supply and sewerage and recreational amenities, thus depleting the precious environmental resource base of the cities. The result is the growing trend in deterioration of air and water quality, generation of wastes, the proliferation of slums and undesirable land use changes, all of which contribute to urban poverty. All these can have adverse impact on the protected areas in any destination.

Economic factors, to a large extent, environmental degradation is the result of market failure, that is, the non existent or poorly functioning markets for environmental services in the protected areas. In this context, environmental degradation particularly in the protected areas has an indirect influence from the harsh economic times currently experienced globally. On the other hand, Market distortions created by price controls and subsidies may aggravate the achievement of environmental objectives in protected areas in Kenya in addition to the level and pattern of economic development affect the nature of environmental problems.

Tourism development in terms of the development of tourism facilities such as accommodation, water supplies, restaurants and recreation facilities can involve sand mining, beach and sand dune erosion, soil erosion and extensive paving. In addition, road and airport construction can lead to land degradation and loss of wildlife habitats and deterioration of scenery. Construction of hotels, recreation and other facilities often leads to increased sewage pollution. Wastewater has polluted seas and lakes surrounding tourist attractions, damaging the flora and fauna. Sewage runoff causes serious damage to coral reefs because it stimulates the growth of algae, which cover the filter-feeding corals, hindering their ability to survive. Changes in salinity and siltation can have wide-ranging impacts on coastal environments. And sewage pollution can threaten the health of humans and animals. Construction of ski resort accommodation and facilities frequently requires clearing forested land. Coastal wetlands are often drained and filled due to lack of more suitable sites for construction of tourism facilities and infrastructure. These activities can cause severe disturbance and erosion of the local ecosystem, even destruction in the long term. For example in Yosemite National Park (US), for instance, the number of roads and facilities have been increased to keep pace with the growing visitor numbers and to supply amenities, infrastructure and parking lots for all these tourists. These actions have caused habitat loss in the park and are accompanied by various forms of pollution including air pollution from automobile emissions; the Sierra Club has reported "smog so thick that Yosemite Valley could not be seen from airplanes". This occasional smog is harmful to all species and vegetation inside the Park. (Source: Trade and Environment Database). Development of marinas and breakwaters can cause changes in currents and coastlines.

Furthermore, extraction of building materials such as sand affects coral reefs, mangroves, and hinterland forests, leading to erosion and destruction of habitats. In the Philippines and the Maldives, dynamiting and mining of coral for resort building materials has damaged fragile coral reefs and depleted the fisheries that sustain local people and attract tourists. Overbuilding and extensive paving of shorelines can result in destruction of habitats and disruption of land-sea connections (such as sea-turtle nesting spots). Coral reefs are especially fragile marine ecosystems and are suffering worldwide from reef-based tourism developments. Evidence suggests a variety of impacts to coral result from shoreline development, increased sediments in the water, trampling by tourists and divers, ship groundings, pollution from sewage, overfishing, and fishing with poisons and explosives that destroy coral habitat.

A lack of land-use planning and building regulations in many destinations has facilitated sprawling developments along coastlines, valleys and scenic routes. The sprawl includes tourism facilities and supporting infrastructure such as roads, employee housing, parking, service areas, and waste disposal.

Institutional factors e.g., in Kenya, there are institutions in place that are in charge of environmental protection and management. The ministry of Environment and Wildlife is the umbrella institution that is in charge of the environment in Kenya. Under this umbrella, there is National Environmental Management Authority, Kenya Forest Service, etc, which are organizations and parastatals mandated with the environmental conservation and management. If these constitutional and legal institutions fail in achieving their mandate, the environment could be impacted negatively. But if they achieve their objectives, it ensures that sustainable environmental management is attained in protected areas.

Technological factors whereby information and communicational technology can have an impact on the tourism industry. This is because tourism is an information-based industry and any technological advancement in the areas of

communication and information can indeed affect the environment. A protected area can have new and innovative ways (technology-enabled) of managing the environment for example waste management and disposal, recycling, eco-lodges, etc which indeed can determine the sustainability of the environment in these protected areas.

Mismanagement despite the fact that governments are typically entrusted with the administration and enforcement of environmental protection, they often lack the commitment or capability to manage protected areas effectively. The regulations for environmental protection may be vaguely defined, costly to implement, hard to enforce, and uncertain in effectiveness (Baumol & Oates, 1997). Government regulatory agencies, as political bodies, are susceptible to making decisions that spend budget on politically beneficial but environmentally unproductive projects. Because of prestige and conspicuousness, the construction of an attractive visitor's center in a protected area in an ecotourism site may take precedence over more pressing environmental concerns like acquiring habitat, protecting endemic species, and removing invasive ones. Tuohino & Hynonen (2001), additionally, influential groups can pressure and sway the interests of the government to their favor. The government and its regulators can become vested in the benefits of the ecotourism industry which they are supposed to regulate, causing restrictive environmental regulations and enforcement to become more lenient. Management of ecotourism sites by private ecotourism companies offers an alternative to the cost of regulation and deficiency of government agencies. These companies have a self interest in limited environmental degradation, because tourists will pay more for pristine environments, which translates to higher profit. The theory indicates that this practice is not economically feasible and will fail to manage the environment in protected areas.

The model of monopolistic competition states that distinctiveness will entail profits, but profits will promote imitation. A company that protects its ecotourism sites is able to charge a premium for the novel experience and pristine environment. But when other companies view the success of this approach, they also enter the market with similar practices, increasing competition and reducing demand. Eventually, the demand will be reduced until the economic profit is zero. A cost-benefit analysis shows that the company bears the cost of environmental protection without receiving gains. Without economic incentive, the whole premise of self interest through environmental protection is quashed; instead, ecotourism companies minimize environment related expenses and maximize tourism demand (Tuohino & Hynonen 2001).

The tragedy of the commons offers another model for economic unsustainability from environmental protection, in protected areas utilized by many companies (Hardin, 1968). Although there is a communal incentive to protect the environment, maximizing the benefits in the long run, a company will conclude that it is in their best interest to utilize the ecotourism site beyond its sustainable level. By increasing the number of ecotourists, for instance, a company gains all the economic benefit while paying only a part of the environmental cost. In the same way, a company recognizes that there is no incentive to actively protect the environment; they bear all the costs, while the benefits are shared by all other companies, the result, again, is mismanagement.

Taken together, the mobility of foreign investment and lack of economic incentive for environmental protection means that ecotourism companies are disposed to establishing themselves in new sites once their existing one is sufficiently degraded. Tourism activities such as trampling and anchoring can cause physical environmental impacts in protected areas. Trampling tourists from tourist activities using the same trail over and over again trample the vegetation and soil, eventually causing damage that can lead to loss of biodiversity and other impacts. Such damage can be even more extensive when visitors frequently stray off established trails. Trampling impacts on vegetation in ways such as breakage and bruising of stems, reduced plant vigor, reduced regeneration, loss of ground cover and change in species composition. Trampling also has impacts on soil such as Loss of organic matter, reduction in soil macro porosity, decrease in air and water permeability, increase in run off and accelerated erosion. Anchoring and other marine activities in marine areas (around coastal waters, reefs, beach and shoreline, offshore waters, uplands and lagoons) many tourist activities occur in or around fragile ecosystems. Anchoring, snorkeling, sport fishing and scuba diving, yachting, and cruising are some of the activities that can cause direct degradation of marine ecosystems such as coral reefs, and subsequent impacts on coastal protection and fisheries. Alteration of ecosystems by tourist activities wherein Habitat can be degraded by tourism leisure activities. For example, wildlife viewing can bring about stress for the animals and alter their natural behavior when tourists come too close. Safaris and wildlife watching activities have a degrading effect on habitat as they often are accompanied by the noise and commotion created by tourists as they chase

wild animals in their trucks and aircraft. This puts high pressure on animal habits and behaviors and tends to bring about behavioral changes. In some cases, as in Kenya, it has led to animals becoming so disturbed that at times they neglect their young or fail to mate.

5. Positive Environmental impacts in Protected Areas

Protection of selected natural environments or prevention of further ecological decline: Tourism can ensure that selected natural environment in a protected area is protected and guarded. It can also ensure that a protected area does not experience further ecological decline. An example is the Halle Park in Mombasa where a protected area has been rehabilitated due to tourism.

Preservation of historic buildings and monuments that are found in the confines of a protected area can be preserved from the profits of tourism e.g., the Tree-Top lodge in the Aberdares National Park which has an historical significance to Britain, can be preserved by the revenue accrued from tourism.

Improvement of the area's appearance in visual and aesthetic terms as tourism has the capacity and potential to improve the appearance of a protected area through trees being planted, drainage improved.

Protects ecological processes and watersheds: Ecological processes and watersheds in a protected area can be protected due to tourism and its related activities. Kakamega National Reserve as a protected area has a forest which is the only tropical forest in Kenya. Tourism and its related activities ensure that the reserve is preserved thereby ensuring the ecological processes and watersheds are protected.

Conserves biodiversity: The biodiversity that includes including genes, species and ecosystems can be preserved in a protected area as a result of tourism. Tourism provides the financial and human resources that ensure that biodiversity is conserved thereby sustainability is ensured in a protected area.

Protects, conserves and values cultural and built heritage resources: The various resources due to tourism that can be financial, human etc can be instrumental in ensuring both cultural and built heritage in a protected area for example the Kimana Sanctuary in the Amboseli are valued, conserved and protected. Research and the development of good environmental practices: Tourism can support research and development of good environmental practices and management systems to influence the operation of travel and tourism businesses, as well as visitor behavior at protected areas. Self-financing mechanism activities of tourism help develop mechanisms for protected area operations therefore liberating it from the dependency on the local and/or central governments. Transmission of conservation values wherein tourism provides an avenue where conservation values can be transmitted through education and interpretation to the locals at the protected area. Communication and interpretation of values: Tourism helps to communicate and interpret the values of natural and built heritage and of cultural inheritance to visitors and residents of visited areas, thus building a new generation of responsible consumers (Eagles et al., 2002).

6. Negative Environmental Impacts of Tourism in Protected Areas

It has been claimed that tourism is a goose that not only lays a golden egg, but also fouls its own nest (Hawkins, 1982). The view that Africa's wild resources should not be tampered with is increasingly unrealistic where the continent's rural poor face great hardships. For many people in Africa, wild resources are not simply something to be looked at and admired, but something that must contribute, along with other land uses, to human livelihoods (Makombe, 1994). Some of these negative impacts include:

Disruption of wildlife breeding cycles and behaviors - Tourism activities especially the mass tourism can disrupt the breeding cycles of wildlife and their natural behavior. Overdevelopment of facilities in the protected area can change migratory routes of wildlife for example the wildebeests. Pollution is a common feature and occurrence especially where general environmental rules and regulations are not observed in a protected area. It can be air, water, noise, solid waste, and visual that can dent the credentials of a protected area as a preferred tourism destination. This can result to the impoverishment and contamination of grounds with toxic pollutants e.g used oils. Pollution causes severe effects on the flora, fishing depredation and contamination of the sea. Air pollution is increased as transportation systems build, as well as noise pollution with increased traffic and visitors to an area (Van der Druim & Caalders, 2002). Tourism is a reason for high levels of landscape pollution inside and outside of parks. Landscape pollution includes all road signs, advertisements at the side of highways, street lights, information signs, and buildings; basically anything that is

unnatural in a natural setting (Perdue, 2002). Inside the park, landscape pollution is only there to facilitate visitor needs making it a major impact of visitors on parks. Noise pollution from airplanes, cars, buses, as well as recreational vehicles such as snowmobiles and jet skis, is an ever-growing problem of modern life. In addition to causing annoyance, stress, and even hearing loss for it humans, it causes distress to wildlife, especially in sensitive areas e.g., noise generated by snowmobiles can cause animals to alter their natural activity patterns.

Destruction of flora and fauna through tourism activities that can destroy the flora and fauna that includes a collection of plants, animals, rocks, coral, or artifacts by or for tourists. Tourism can result to the destruction of ecosystems and extinction of multiple species of the fauna due to the massive presence of visitors. The aspect of sporting activities especially in protected areas has caused serious problems of erosion of the ground that, inevitably, affects the wildlife. The Kenyan example is the Rhino Charge which was once held at Aberdares that clearly has an explicit and conspicuous effect on the environment, although the event has international recognition and acclaim.

Water shortages resulting from increase in demand for wáter arising from the activites of tourism. The scarce or lack of water can favor desertization. An example is the Mombasa region which struggles to have enough or adequate quality water partly due to the high demand of water. Water, and especially fresh water, is one of the most critical natural resources. The tourism industry generally overuses water for hotels, swimming pools, golf courses and personal use by tourists. This can result in water shortages and degradation of water supplies, as well as generating a greater volume of waste water. Golf course maintenance can also deplete fresh water resources. In recent years golf tourism has increased in popularity and the number has grown rapidly which require enormous amount of water every day and, as with other causes of excessive extraction of water, this can result in water scarcity. If the water comes from wells, overpumping can cause saline intrusion into groundwater. Golf resorts are more and more often situated in or near protected areas or areas where resources are limited, exacerbating their impacts.

Degradation and loss of natural landscape, historic sites, and monuments whereby tourism especially mass tourism cause untold degradation found within a protected area and also the loss of open space needed by wild animals for their survival. Introduction of exotic species irrespective of its' effects on flora or fauna or the ecosystem in one way or the other. An example is the introduction of the 'Mathenge' trees in Baringo which although has curbed deforestation, the tree has had adverse impact on both domestic animals and humans by resulting to loss of limbs and teeth to animals due to its poisonous substance (Eagles et.al.,2002).

Solid waste and littering in areas with high concentrations of tourist activities and appealing natural attractions, waste disposal is a serious problem and improper disposal can be a major despoiler of the natural environment - rivers, scenic areas, and roadsides. For example, cruise ships in the Caribbean are estimated to produce more than 70,000 tons of waste each year. Today some cruise lines are actively working to reduce waste-related impacts. Solid waste and littering can degrade the physical appearance of the water and shoreline and cause the death of marine animals. In mountain areas, trekking tourists generate a great deal of waste. Tourists on expedition leave behind their garbage, oxygen cylinders and even camping equipment. Such practices degrade the environment with all the detritus typical of the developed world, in remote areas that have few garbage collection or disposal facilities. Some trails in the Peruvian Andes and in Nepal frequently visited by tourists have been nicknamed "Coca-Cola trail" and "Toilet paper trail" (http://www.gdrc.org/uem/eco-tour/envi/one.html)

Tourism creates great pressure on local resources like energy, food, and other raw materials that may already be in short supply. Greater extraction and transport of these resources exacerbates the physical impacts associated with their exploitation. Because of the seasonal character of the industry, many destinations in protected areas have ten times more inhabitants in the high season as in the low season. A high demand is placed upon these resources to meet the high expectations tourists often have (proper heating, hot water, etc.).

Most forms of ecotourism are owned by foreign investors and corporations that provide few benefits to local communities. An overwhelming majority of profits are put into the pockets of investors instead of reinvestment into the local economy or environmental protection. The limited numbers of local people who are employed in the economy enter at its lowest level, and are unable to live in tourist areas because of meager wages and a two market system (Tuohino, A., and A. Hynonen, 2001). In some cases, the resentment by local people results in environmental degradation. As a highly publicized case, the Masai nomads in Kenya killed wildlife in national parks to show aversion to unfair compensation terms and displacement from traditional lands (Cater, E. (1994). The lack of economic

opportunities for local people also constrains them to degrade the environment as a means of sustenance (Tuohino, A., and A. Hynonen (2001). The presence of affluent ecotourists encourage the development of destructive markets in wildlife souvenirs, such as the sale of coral trinkets on tropical islands and animal products in Asia, contributing to illegal harvesting and poaching from the environment. In Suriname, sea turtle reserves use a very large portion of their budget to guard against these destructive activities.

Displacement of people e.g., one of the most powerful examples of communities being moved in order to create a park is the story of the Masai. About 70% of national parks and game reserves in East Africa are on Masai land (Kamuaro, 2007). The first undesirable impact of tourism was that of the extent of land lost from the Masai culture. Local and national governments took advantage of the Masai's ignorance on the situation and robbed them of huge chunks of grazing land, putting to risk their only socio-economic livelihood. In Kenya the Masai also have not gained any economic benefits. Despite the loss of their land, employment favours better educated workers. Furthermore the investors in this area are not local and have not put profits back into local economy. In some cases game reserves can be created without informing or consulting local people, who come to find out about the situation when an eviction notice is delivered (Kamuaro, 2007). Another source of resentment is the manipulation of the local people by their government. "Eco-tourism works to create simplistic images of local people and their uses and understandings of their surroundings. Through the lens of these simplified images, officials direct policies and projects towards the local people and the local people are blamed if the projects fail" (West, 2006). Clearly tourism as a trade is not empowering the local people who make it rich and satisfying. Instead ecotourism exploits and depletes, particularly in African Masai tribes. It has to be reoriented if it is to be useful to local communities and to become sustainable (Kamuaro, 2007).

Threats to indigenous cultures through ecotourism which claims that it preserves and "enhances" local cultures. Evidence shows that with the establishment of protected areas local people have illegally lost their homes, and most often with no compensation (Kamuaro, 2007). Pushing people onto marginal lands with harsh climates, poor soils, lack of water, and infested with livestock and disease does little to enhance livelihoods even when a proportion of ecotourism profits are directed back into the community. The establishment of parks can create harsh survival realities and deprive the people of their traditional use of land and natural resources. Ethnic groups are increasingly being seen as a "backdrop" to the scenery and wildlife. The local people struggle for cultural survival and freedom of cultural expression while being "observed" by tourists. Local indigenous people also have strong resentment towards the change, "Tourism has been allowed to develop with virtually no controls".

7. Conclusion

Environmental changes may be driven by several factors including economic growth, population growth, technological innovations and institutional competencies. Environmental impacts arising from tourism in protected areas fall into three categories that include direct Indirect and cumulative impacts. These three impacts groups can be further classified according to their nature which include positive and negative impacts, random and predictable impacts, local and widespread impacts, temporary and permanent impacts and short- and long-term impacts. Protected areas in Kenya experience at least one these impacts. Protecting the wildlife in Kenya has become an uphill task with the threat of poaching and trading of exotic species looming. The impact of tourism in the environment is really the most negative aspect of the sector. It has generated serious upheavals ecologically: destruction of ecosystems and massive presence of visitors, diminution of the amount and quality of the water, impoverishment and contamination of grounds, extinction of multiple species of the fauna, severe effects on the flora, fishing depredation and contamination of the sea, unplanned urban growth with lack of public services among others, the lack of water can favor, in addition, the desertization, impoverishment and contamination of grounds with pollutants e.g used oils, extinction of multiple species of the fauna: the proliferation of sport activities (motorcycles, mountain bikes, vehicles, etc.). It causes serious problems of erosion of the ground that inevitably affects the flora and fauna.

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