Table of Contents

1.0. Introduction

1.1. Environmental Ethics

The ethics of consumption is the concept of right and wrong and the rule of behaviour that influence consumption. The unhealthy modern consumption patterns have led many scholars and authors to search theoretically and practically for sustainable consumption patterns. Authors like Crocker and Linden (1998), and Westra and Werhane (1998), each provides a wide range of views on the ethics of modern consumption patterns and the approaches that should be taken to change them. Mansfield College, Oxford in 1999 has established The Oxford Commission on Sustainable Consumption acting as a catalyst and facilitator for government, business, citizens, the media and others to take actions to achieve sustainable patterns of consumption.

Environmental ethics is concerned with the issue of responsible personal conduct with respect to natural landscapes, resources, species and non-human organisms. Conduct by persons is the direct concern of moral philosophy.

Moral responsibility normally implies knowledge, capacity, choice, and value significance. That is to say, if a person is morally responsible to do something, then he (a) knows of this requirement, (b) is capable of performing it, (c) can freely choose whether or not to do it, and (d) the performance thereof affects the welfare and/or liberty of other beings. Because one's response to these requirements reflects upon his value as a moral person, a peculiarly distinctive trait of humanity, we say that this response has moral significance.

This analysis of moral responsibility explains why environmental ethics has only recently attracted the attention and concern of environmentalists and the general public. Until quite recently, human effects on the environment were regarded as neutral since we assumed nature was both impersonal and too vast to be injured by our interventions. At the very least, we were quite unable to foresee the harm resulting from our dealings with nature. Now of course we know better. We know that we can cause massive and permanent damage to natural landscape, resources and ecosystems. Not only do we know that we can cause these insults, we also know how we can cause them, and how we can prevent or remedy them. Knowing this exacts a moral obligation to act with care, foresight and at times, with forbearance and constraint. In our dealings with the environment, we are in short, called upon to reflect, act, or perhaps to refrain from acting in a manner, which testifies to our worth as *moral* persons and as a *moral* culture – in a word respond ethically.

1.2. Sustainable Development

Population and human resources, food security, species and ecosystems, energy, industrial development, and urbanisation. In the context of these challenges they discussed international environmental problems, what successes had been registered in trying to address those problems, the scope and nature of the environmental problems still facing the world community, and the role of the world's economic systems in developing solutions to these problems and providing long-term relief for what they perceived to be the related problems of poverty and underdevelopment.

In the process of describing these challenges and proposing potential policy directions the world community could take to address the problem they had identified, sustainable development (WCED, 1987).

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development requires meeting the major needs of all and extending to all the opportunity to satisfy their aspirations for a better life. However, living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long term sustainability (WCED, 1987). Thus, sustainable development, as a concept, has two primary pillars: Economic development and the consumptive use of the world's natural resources in ways that are sustainable. We have to consume, in other words, with the realisation that resources are finite, and part of our job as human beings is to preserve the human future on this planet into a limitless future. In this concept of the limitless future, it is declared that "ecological interactions do not respect the boundaries of individual ownership and political jurisdiction". Nor has the local nature of human interaction with the environment been confined, as the result of the creation of ever more sophisticated technologies, to local environmental effects.

	Very worried		Worried		Not worried		Not very worried		No opinion		Total response		
Environmental problems	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Mean score
Air pollution (e.g., construction dust, open burning)	29	22.3	82	63.1	13	10.0	6	4.6	-	-	130	100	3.03***
Water pollution (e.g., from soil on construction sites)	39	30.0	66	50.8	18	13.8	7	5.4	-	-	130	100	3.05***
Noise pollution (e.g., from operations on construction sites)	23	17.7	69	53.1	28	21.5	10	7.7	-	-	130	100	2.81***
Ground water contamination (from illegal dumping or landfill)	40	30.8	60	46.2	22	16.9	7	16.9	1	0.8	130	100	3.01***
Deforestation (from land clearing activities)	35	26.9	73	56.2	17	13.1	5	3.8	-	-	130	100	3.06***
Soil erosion (expansion of industrialization or urbanization) natural resources (such as fuel, timber and sand supply)	30	23.1	71	54.6	23	17.7	6	4.6	-	-	130	100	2.96***
Reduction in supply of natural resources (such as fuel, timber and sand supply)	28	21.5	64	49.2	32	24.6	5	3.8	1	0.8	130	100	2.87***
Lack of sanitary landfill	21	16.2	66	50.8	31	23.8	12	9.2	-	-	130	100	2.74***
Lack of separate construction waste landfill	15	11.5	72	55.4	27	20.8	13	10.0	3	2.3	130	100	2.64***
Other problems	-	-	-	-	-	-	-	-	-	-	130	100	-

2.0. Environmental Impact Assessment (EIA)

Environmental Impact Assessment Environmental impact assessment (EIA) is a decision-making process that systematically evaluates the possible significant (negative or positive) effects that a proposed project action may exert on the natural, social and human environment of a particular geographic area (Lei and Hilton, 2013). It is a process that analyzes and evaluates the impacts that human activities can have on the environment. Its purpose is to guarantee a sustainable development that is in harmony with human welfare and the conservation of ecosystems (Toro, et al., 2013). EIA is a decision-making process that evaluates the possible significant effects that a proposed project may exert on the environment (Lei and Hilton, 2013). Toro, et al. (2013) state that EIA is the technical key to incorporating concepts such as the precaution principle and to preventing the loss of natural (and manmade) resources, which is evidently the main goal of sustainable development in decision-making.

2.1. Environmental Impact Assessment of Water Resources Development and Integrated Water Resources Management

As one of the legitimate users of water (Hirji& Davis, 2009), the environment should be allotted sufficient amount of water for its sustainability, based on seasonal variability in water demand. Whenever there are competing needs of water resources, maximization of benefits and minimization of costs would largely depend on a water allocation decision-making procedure which incorporates views of different stakeholder, perspectives and is based on informed assessments of the trade-offs (McCartney and Awulachew 2006 cited in McCartney, et al., 2010). Besides, participatory methods are widely seen as essential to address the difficulties of environmental policy and decision-making (Lienert, et al., 2013). As much as the adaptive ecosystem approach requires a holistic view of the ecological and socio-economic aspects of an entire landscape, it also requires an integrated institutional and fully participatory planning and decision making process (ASCE, 1998). Specially, in view of increasing future dynamics and climate change, a more participatory and long-term planning approach is required (Lienert, et al., 2013). Consequently, in contrast to the past, (environmental) planning needs to be much more integrated across a range of levels and scales, with much greater consideration of the full range of possible options and the potential implications of climate change (McCartney, et al., 2013). It goes without saying that development projects are meant to improve the livelihoods of the people. However, it is a mere fact that the overall national benefit of the project overweighs local social and environmental damages. This may be dismaying to the local community. Hence, the community affected by a development project should be previously informed so that its members can participate in the decision-making processes (Toro, et al., 2013). Sustainable water resources development has a great role to play in ensuring the integrity of ecosystems (Acreman and

J.Dunbar, 2004). This was highlighted in the declaration from the Second World Water Forum in The Hague in 2000. Integrated water resources management considers the environment to be a legitimate user of water and integrates environmental flows into the implementation of IWRM (Hirji& Davis, 2009). Conversely, the 2002 Johannesburg World Summit on Sustainable Development reinforced the role of environmental protection as a key pillar of sustainable development (Acreman and Dunbar, 2004). Because, the removal of water from rivers, and other changes to the flow regimes, invariably result in a loss of ecosystem function and resilience (Bunn and Arthington 2002 cited in Nel, et al., 2011). The greater the divergence from a natural flow regime-in terms of volume and timing-the greater the ecosystem changes (Poff and Zimmerman, 2010 cited in Nel, et al., 2011); hence, the less the sustainability of the system. If the legitimate right of the ecosystems as a water user is acknowledged, this will make a remarkable step forward towards the achievement of the sustainability of water resources development that nations have been longing for. Therefore, environmental flows assessment and allocation of water for ecological water demand should be mandatory before granting permission for construction of water resources development.

2.2. Major Environmental Implications of Water Resources Development & Major Environmental Impacts of Water Resources Projects:

The impacts caused by construction of dams and reservoirs include changes in the microclimate, loss of vegetation cover, soil erosion, variation in water table and enhanced seismic activities due to pressure of water (Siddiqui, et al., 2008). Although the development of water resources through dams (small and large), interbasin transfers, aquifer storage and recovery, levees and dikes, and boreholes provides a buffer against climate variability (Hirji& Davis, 2009), ill-conceived water storage structures constructed today will be a waste of scarce financial resources, and may aggravate unpleasant climate change impacts rather than mitigating it (McCartney, et al., 2013). The realities of climate change are such that if the performance of agricultural water storage is to be enhanced in the future, much closer attention must be paid to planning and management (ibid.). The environmental impacts which a water resources project is likely to have can be classified as:

- Impacts within and around the area covered by dam and reservoir;
- Downstream effects caused by alteration in hydraulic regime.
- Regional effects in terms of overall aspects including resources use and socio-economic impacts.

Though water resources development activities date back to thousands of years, only during the last 4-5 decades, both the size and number of projects have increased significantly (Jain and Singh, 2003). With the doubling of the global irrigated area over the last 50 years, withdrawals for agriculture have been rising, resulting in total global water withdrawals of only a share-about 9 percent of internal renewable water resources (FAO, 2011). This figure seems to represent

small proportion; however, on-stream and off-stream environmental impacts due to the rapid expansion of irrigated lands and increasing withdrawals of freshwater are inevitable, as irrigation and water resource development can also cause social and environmental problems (Stockle, 2001). Particularly, in the past, evaluation of environmental impacts was inadequate, and the impact on poor people living both upstream of dams (in the area inundated by the reservoir) and downstream of dams (where flows were modified) has rarely been addressed properly. Consequently, the legacy of large dams is mixed (WCD 2000 cited in IWMI, 2013). Hence, water resources projects impact assessment is very important for protection, conservation or enhancement of the existing environmental conditions (Siddiqui, et al., 2008). Prediction of impacts involves projecting the baseline environmental setting into the future with and without project and then performing necessary computations for predicting real impacts of the proposed development (ibid.). Its application involves the use of attributes to identify and evaluate possible environmental changes caused by a project, construction, or other human activity.

Water resources development projects have both beneficial and adverse environmental impacts. All river development schemes are built to produce obvious beneficial effects for society, the main ones being irrigation, land reclamation in river flood plains and tidal areas, domestic and industrial water supply, flood control and improved dry weather flow in rivers, hydroelectricity, navigation, recreational activities, and so on (Abbasi, 2001). The benefits of irrigation have resulted in lower food prices, higher employment and more rapid agricultural and economic development. The spread of irrigation has been a key factor behind the near tripling of global grain production since 1950 (Stockle, 2001). The apportioning of limited water resources embeds trade-offs between different people, between substantially different uses of water, between water resources and other resources, and between the present and future generation of population (Griffin, 2006), George, et al. (2008).

It is evident that on the course of meeting human water demands for socio-economic betterment, water will be abstracted and diverted from its natural course, or pumped out from the aquifers, imposing distortions of varying extents on the natural occurrence of water. This will eventually result in some environmental impacts. Abbasi (2001) mentions that the diversion and dying up of mountain rivers is detrimental to fishing and is an eyesore. Such projects must be (planned and) built to higher standards and with more accountability to local people and their environment than in the past (Griffin R. , 2006). As a water management strategy, past water resource planning has focused mostly on large dams, the construction of which is often controversial although they have made an important and significant contribution to human development (McCartney, et al., 2013). They are often seen as essential for national economic development, and their macro-economic benefits tend to be highlighted while environmental considerations and especially local economic impacts and social impacts may be less adequately evaluated (Baba & Hirose, 2014). However, dams and reservoirs, aqueducts, river diversions, major irrigation projects, industrial and domestic diversions, groundwater pumping etc have a major hydrological impact which could affect both present and future generations and wildlife (George, et al., 2008). Hence, there

is no doubt that on one side of the balance sheet, such projects have sometimes meant ecologically stressful situations for animal and plant species, the forced removal of local peoples, deforestation and flooding of land areas, and other environmental problems; and problems ranging from the loss of fertile soils, increases of greenhouse gas emissions, creation of environments for diseases and even local (and regional) climate changes have been claimed (ASCE, 1998). In addition to these, the impacts caused by construction of dams and reservoirs include variation in water table and enhanced seismic activities due to pressure of water (Siddiqui, et al., 2008).

Thus, the administrative control and management activities that strive to match the demand for water by the socio-economic system with the supply of water system, though is the fundamental goal of water resource planning and management (Dong, et al., 2013), should not compromise ecosystems sustainability. As a remedy to the detrimental effects of river diversion on fishing, Abbasi (2001) proposes the allocation of an adequate guaranteed compensation flow through the dam; the amount to be varied with daylight and night hours and from season to season, as required by tourist amenity considerations.

However, the term „compensation" tends to compromise the rightful water share of the environment; and if sustainability of development and human welfares are truly sought, it could still be argued that the environment being legitimate user of water (Hirji& Davis, 2009), should be acknowledged universally. Hence, environmental flows assessment and water allocation for the environment are worth considering in EIA of water resources development.

River Water Quality, Malaysia, 2001-2008

Year / Category	2001	2002	2003	2004	2005	2006	2007	2008
Very Polluted	13	14	9	9	15	7	7	7
Slightly Polluted	47	43	52	53	51	59	45	60
Clean	60	63	59	58	80	80	91	76
Total River Basin	120	100	120	120	146	146	143	143

Source: Adapted from *Department of Environment, Environmental Quality Report, 2008, p. 50.*

3.0. Case study #1 : The Bakun Hydroelectric Dam Project

3.1. The project

In its original form the HEP comprised the construction of a 2,400 MW hydroelectric dam, the transmission of its electricity, and the building of related infrastructure including access roads, a new township and an airport. The dam would bridge the Balui river, about 37 km upstream of Belaga in Sarawak. Sarawak is one of the two East Malaysian States in the northern part of the island of Borneo. The transmission of its electricity would have necessitated some 1,500 km of overland wires and four 650-km-long undersea cables under the South China Sea to Peninsula Malaysia.

The dam is to be a 205-meter-high Concrete Face Rockfill Dam (CFRD), with a length of crest of 740 meters, a base width of 560 meters and a crest width of 12 meters. This makes it one of the highest rockfill dams in the world. It will flood 69,640 hectares of land, an area bigger than Singapore. Its catchment area is over 1.5 million hectares of mainly primary forest, even though some 16 percent of Sarawak's total log production currently comes out of this area. Fifty-one percent of the land of the reservoir area is Native Customary Land (meaning it is legally owned by indigenous communities).

The project requires the relocation of up to 10,000 indigenous people, mainly of the Kayan, Kenyah, Kajang, Ukit and Penan ethnic groups. In addition, by changing water quality and river flow patterns, it would potentially affect the thousands of people living downstream of the dam, on the Rajang river, which is the longest river in Malaysia. The completion date was to have been 2003.

3.2. History of the project

Studies relating to the hydropower potential of the Rejang River Basin, in which Bakun is situated, began in the 1960s. The Bakun HEP, which was to be a part of a series of dams, was subject to several dozen separate studies covering technical, economic and environmental aspects. The government began serious discussion on the project in the late 1980s, but decided against it in 1990, for the following reasons:

- Recession and slow economic growth in the mid 1980s dampened the government's optimism on the growth of electricity demand;

- The availability of gas for electricity generation caused the project to lose its status as the least-cost option for Peninsula Malaysia until the year 2000.

  A review of the project undertaken in 1992 concluded that the project was economically viable and should be implemented, for full commissioning by 2005. Based on this review, the government agreed in September 1993 that the project be started.

  Prime Minister Mahathir said at the time: "Bakun will not only provide the cheapest

source of energy but will also serve as a catalyst to the country's industrialization program." This included being able to supply energy to fuel an aluminum smelter in Bintulu. Other official reasons given at the time for its revival were:

- To generate employment and valuable spin-off industries for Sarawak, which were expected to add 3.0 percent to that state's growth per year;
- To bring the indigenous peoples "into the mainstream of development" through resettlement;
- To provide much needed infrastructure to a remote part of Sarawak, which will become a valuable tourist destination.

3.3. EIA reports:

The project promoter was required under the Environmental Quality Act 1974 and the Natural Resources and Environment (Amendment) Ordinance, 1993 of Sarawak, to submit EIA reports, detailing the possible impacts and the mitigating measures. The Natural Resources and Environment Board (NREB), Sarawak and the Department of Environment, Ministry of Science, Technology and Environment were the responsible authorities for approving the EIA reports and in ensuring that the project promoter complied with any mitigation measures as stipulated in the EIA reports.

The publication of the EIA did little to reassure critics. Not only did it specifically exclude assessment of the impact on the communities, but the assessment of the project generally was full of omissions, mistakes and questionable assumptions. In issuing the EIA report, the government ensured that it could be inspected only in Kuching, the state capital of Sarawak, and two small towns in the vicinity of the proposed dam, shutting out those campaigning against it from having access to the report, which was also made available in these three centers at an exorbitant cost and only in English.

At one stage the Malaysian High Court even declared the project invalid. It ruled that the decision to implement the project had not been reached through any form of public participation. The government's reaction was to dismiss the decision as "technical".

The High Court found that the government had subverted the basic rights of the indigenous peoples to comment on the EIA before approval. The issue was brought to the court by three members of a native tribe who would have been the direct victims of the project. The ruling was later dismissed on appeal.

3.4. Case Summary

Despite a long history of controversy and difficulties, both financial and political, Malaysia is proceeding with the Bakun Hydroelectric Project (HEP) in Eastern Sarawak, although most likely on a smaller scale than originally planned.

Prime Minister Mahathir Mohamad said on October 23 the project would be revived as money spent on pre-construction works should not be wasted. He added the dam was needed to meet the growing
demand for electricity in Malaysia. However, most of the growth in demand for electricity is not in Sabah and Sarawak in East Malaysia where the dam is located, but in the peninsular.

Environmentalists and social activists have roundly and vigorously opposed the project, saying it will destroy a vast tract of rain forest and force more than 10,000 villagers from their homes. Many thousands have already been resettled.

Last June Mahathir said Malaysia must proceed with construction because of rising industrial demand for electricity, and work on diversion tunnels for the river was resumed. The project is now managed by the national utility company, Tenaga Nasional Berhad.

Work on the 12-meter high, 1.4-kilometer long tunnels, being undertaken by South Korea's Dong Ah Construction Ind Co Ltd, is expected to be completed in early 2001. On the current schedule the dam will be able to generate 500 MW of electricity by 2005.

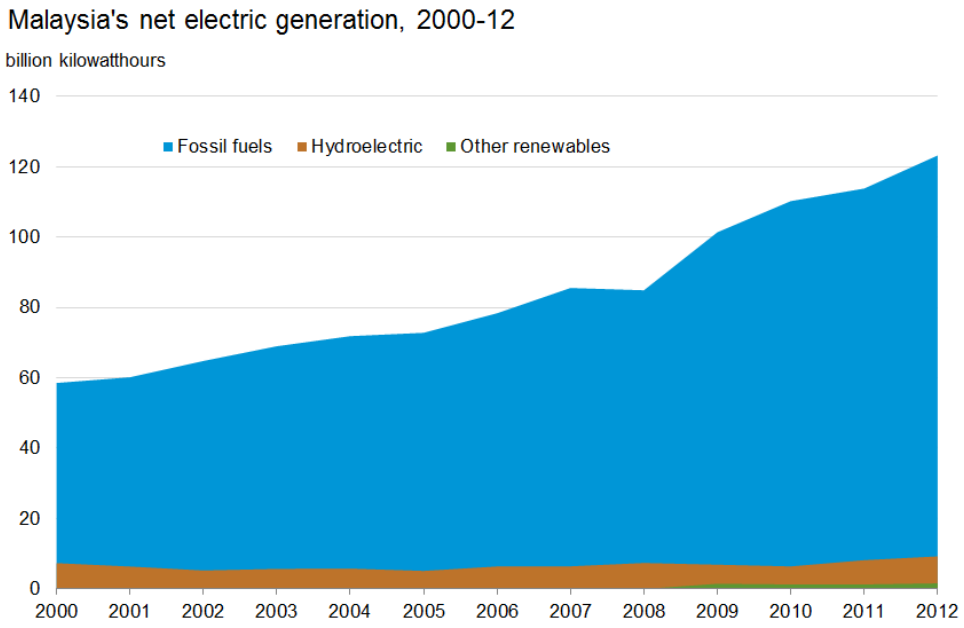
3.5. Conclusion

It is a myth that dams are an effective flood control. Although dams can help to minimize the risk of the periodic, normal floods, they can instead become the source for severe and extreme flooding damages. By confining the river to a straighter course, embankments increase the volume and speed of the river, which in turn increase its potential to cause larger damage downstream. Containing the river’s sediment load within its banks raises the river bed, which means embankments must be raised further to compensate for the higher river bed. Eventually, the river level will rise above the height of the surrounding plain; a recipe for a devastating damage of a flash-flood should the huge embankments break. The problem is hydroelectric dams suffer from two conflicting purposes: to generate electricity and to reduce flooding. The water level in hydroelectric dams are intentionally kept high to increase the power for electricity, but by keeping the water level high, this creates a greater risk of flood damage. To reduce flooding events, the water level in reservoir must be kept low, but this act reduces the power for electricity. So if you are a river dam operator, what would you do? The country needs electricity, so you keep the water level high.

The Bakun Dam is a socially and environmentally destructive way to meet Malaysia's growing energy needs. Greater economic growth and greater push for wealth require increasingly more energy to drive these aspirations. Presently, Malaysia is self-sufficient in energy, but this is expected to end by 2015 (only five years away). After that, Malaysia must import energy and scour her land and seas for further sources of energy. But traditional sources of energy (that is, fossil-based energy) are detrimental to our climate. At the moment, hydroeletric dams contribute 18% of Malaysia's electricity needs.

So if hydroelectric is a dirty word and if we want to divorce ourselves from it, with what could we replace hydroelectric for our electricity? More gas and coal-powered plants? But those energies are dirty too. Furthermore, natural gas and oil are both running out in Malaysia. Our best bet for renewable energies are solar and geothermal power, with some contribution from biogas and biofuel (provided they are shown to environmentally friendly). And nuclear power should also not be ruled out.

Issues like Bakun Dam only highlight the energy challenges faced by Malaysia and the world today. Malaysia needs to find alternative and less destructive ways to meet the nation's energy demands, and we must do our part too by understanding that we need to change our lifestyles to one with a lower carbon footprint.



4.0. Case Study #2: Taman Negara

4.1. Background

Taman Negara or National Park was established in 1938/1939 as the King George V National Park. It was renamed Taman Negara after independence, which literally means "national park" in Malay. It was declared for conservation as protected area in 1939 and has become Malaysia's premier national park and the largest in the country, and has a reputation as the world's oldest tropical rainforest in the world. Its located in three states, Pahang, Terengganu and Kelantan, which each with its own legislation enforced by each state. Taman Negara Pahang is the largest at 2,477km2, followed by Taman Negara Kelantan at 1,043km2 and Taman Negara Terengganu at 853km2. Taman Negara Pahang is located in the heart of Peninsular Malaysia in the state of Pahang. Tourists can access Taman Negara by land or water, as air travel is not available (see Figure 1). The highest point in the National Park is Tahan Mountain which is the main attraction. With the height of 2,187 meters above sea level, it is regarded as the highest mountain in Peninsular Malaysia.

The stated purpose of Taman Negara is "to utilize the land within the park in perpetuity, for the propagation, protection and preservation of indigenous flora and fauna". Due to its location, which covers three states (Pahang, Kelantan and Terengganu) there are 4 ways to access to the area. Tourists can access to Taman Negara by land or water as air travel is not available so as to preserve and conserve the natural environment.

4.2. The Abuse of Taman Negara

Even though Taman Negara is protected area and managed by many authorities, but as a recreational area being open for public, it also expose to abuse. The issues of abuse affecting Taman Negara are not new, but the initiatives taken by the authorities to overcome them are not so apparent. A site visit to Taman Negara and interview with a few interest parties in January 2010 reveals some abuse practices in the Park.

1. The quality and level of river water - those who arrive at the National Park would notice that the quality of water flowing through the National Park is low. According to the officer-in-charge, the sources of contamination are from the uncontrolled logging activity, emission produced from passenger boats as well as locals and tourist who freely throw leftovers and rubbish into the river.

2. The state of hygiene - on the site, the negative impact of recreation and tourism activities could be observed everywhere. Littering seems to be uncontrolled practice since rubbish is seen everywhere, most of them thrown by the local tourists. The level of hygiene at any tourism site needs to be looked into because it would be a crucial factor that determines the visitors' return.

3. Unplanned development - even though there is a proper development plan by the state authority on Taman Negara, however it does not include other development activities carried out by the local communities around National Park. Most of the development in that area are carried out without approval from the council. 117 Tourism Management at Taman Negara (National Park) Pahang, Malaysia

4. The "lost" rare species animal - various kinds of animals are found in the National Park, and this is one the main attractions for visitors. Some of these animals are endangered and protected species that can hardly be found in other places. However, the rare species available here can hardly be seen. Furthermore, poaching of the protected animals is not uncommon thus reducing the number of protected species in the area.

5. Overflow of tourists - the large number of tourist to Taman Negara, especially during holidays, creates problems in terms of the traffic congestion, litter and illegal trading, resulting in indirect contribution to the damage to the ecosystem in term of pollution. Furthermore, the overflow of tourists call for the need to increased security, parking and sanitation.

4.3. Conflict of Management

Despite the immediate connotation of conflict being a destructive or inhibitive force, conflict can in fact be healthy for an organisation if managed constructively. It may bring to light previously unseen pressures or discontents, promotes problems to be addressed and may improve individuals understanding of the goals and motives of others (Van Slyke, 1999; Capozzoli, 1999; Singh and Johnson, 1998; Klunk, 1997). Poor management of conflict, however, leads to the inevitable loss of team and organisational trust and bonds, and reduces the team motivation (Cloke & Goldsmith, 2000; Capazzoli, 1999).

Conflicts occur because there is no clear demarcation of responsibilities among the relevant departments in terms of preserving the nature.

- The private sector involved in uncontrolled logging activities. The effect is reflected in the water quality in Kuala Tahan river, the main source of water supply within the area that is contaminated due to these activities. This results in low water quality.
- The Wildlife Department have not any authority to enforce the parties to adhere to safe logging practices.
- The Department of Irrigation and Drainage too does not seem to be able to do much.
- Illegal motels and chalets managed by the private sector without any approval from the District Council can be seen around the main entrance of Taman Negara. Some of the places might not be safe for occupation, as they are illegally developed and have not been issued occupation certificate by the District Council.

4.4. Conclusion

In summary, Taman Negara Park Authority has to reassess its vulnerability. There is a need to mainstream crisis management programme (CMP) into all eco-tourism related activities and attractions as well as any newly developed projects or developments. Specifically, the following are suggested:

1) Identify loss exposures, assess vulnerability and compile records of all loss experiences and near misses.

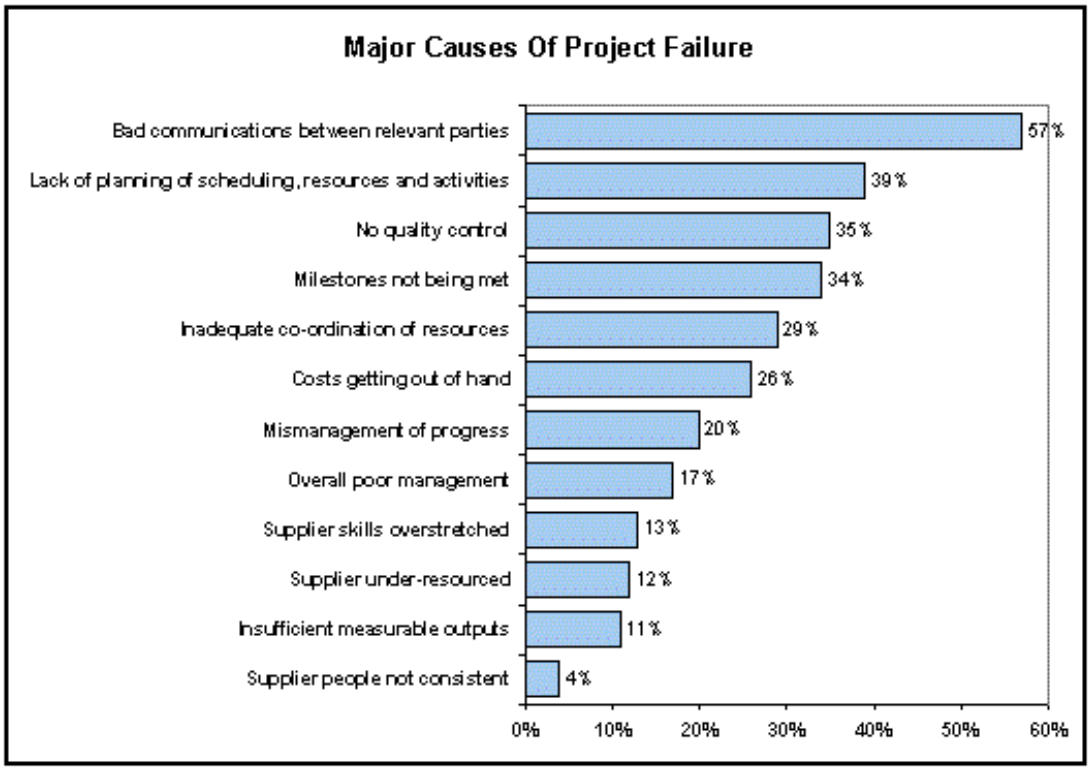
2) Monitor and evaluate procedures for CMP initiatives, this need to be conceptualized into all eco-tourism activities and all new project or development.

3) Implement, review or revive structures and systems to support crisis management.

4) Strategies for information sharing and networks for CMP and other related activities need to be strengthened at the organizational level as well as filtering down to all service operators and the communities. It must build capacity for CMP coordination purposes.

5) Taman Negara Park Authority must generate own funds and create budget to supplement available funds to implement CMP programs.

It is very important that all relevant stakeholders be a part of the crisis management team. More specifically, all boat operators, tour guides, food providers, Park Authority, rescue teams, hospital, neighbouring residence and other relevant stakeholders must be a part of the crisis plan and strategy



5.0. Summary

So, why is environmental ethics important? It is important because the explosive growth of scientific knowledge, followed shortly by a parallel growth in technical ingenuity, has created an explosive growth in moral problems – some unprecedented in human history. While ethics is a very ancient human preoccupation, environmental ethics is very new.In view of the recent dramatic growth in knowledge and technology, it is not difficult to see why this is so. And now, within our lifetime, we have acquired capabilities and thus face choices that have never been faced before in the course of human history – indeed, we now face many capabilities and choices never contemplated or even imagined before. These include choices of birth, life and death for our species and others; choices that are rapidly changing the environment forever.

When the ecosystem was not understood or even recognized or appreciated as a system; when the earth and its wilderness were believed to be too vast to be damaged by voluntary human choice; at such a time, there was no environmental ethics. But in our own time, with knowledge has come power.This knowledge and this power are a result of the scientific revolution. As a methodology, science purports to be value free and most practitioners of science aim to be value free. But this theoretically value free methodology has opened up a bewildering array of capacities and choices to us evaluating creatures. And we are now equipped with the ethical insights and moral restraints that are necessary to deal wisely and appropriately with these choices especially as they relate to the environment. The issues of environmental ethics are momentous and involve moral choices of enormous importance that we can make and even more, which we must make. Our moral responsibility to nature and to the future is of unprecedented significance and urgency, and it is a responsibility that we cannot escape. That is the essence of environmental ethics.

Environmental ethics stretches classical ethics to a new level. ‘All ethics seek an appropriate respect for life.’ But we do not need a humanistic ethic applied to the environment, as we have needed one for business, law, medicine, technology, international development or nuclear disarmament. Respect for life does demand an ethic concerned about human welfare, but environmental ethics stands on a frontier, as radical theoretically as it is applied. It alone asks whether there can be non-human objects of duty. It seeks to evaluate nature, both wild nature and the nature that mixes with culture and to judge duty thereby.