

# World Environment Day 2010

## Many Species. One Planet. One Future.

The 2010 World Environment Day (WED) theme of "Many Species. One Planet. One Future" focuses on the central importance of the globe's wealth of species and ecosystems to humanity. The United Nations (UN) has also declared 2010 to be the International Year of Biodiversity. The importance of biodiversity awareness has been given more clarity this year with the WED taking on the biodiversity theme to coincide with the 2010 International Year of Biodiversity. Thus, it is all the more important that we human beings make serious efforts to increase our understanding of the vital role that biodiversity plays in sustaining life on Earth.



#### World Environment Day : 5 June, 2010

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On this auspicious day of 5 June, the world commemorates WED and this United Nations-initiated event has been celebrated on a yearly basis since 1973. Various programmes are organised with environmental awareness themes that are meant to draw the world's attention to the health condition of our environment, and encourage policy makers on the important role they can play to protect



#### MANY SPECIES • ONE PLANET • ONE FUTURE WORLD ENVIRONMENT DAY • 5 JUNE 2010

"The logo for the WED 2010 is an ensemble of life-form elements in a round cohesion that signifies the Earth. The theme and logo encompass the vision of togetherness where all parties or individuals participate in conserving the diversity of life in our planet, thus leading to a safer and more prosperous future."



and safeguard the fragile environment. In order to create worldwide, extensive coverage, WED is celebrated each year in a different city with a different theme. Some of the past host cities include Mexico City, Mexico (2009), Wellington, New Zealand (2008), Tromsø, Norway (2007) and Algiers, Algeria (2006). Rwanda has been selected by the United Nations Environmental Programme (UNEP) as host country for year 2010 wit it's capital, Kigali, as the host city of WED for this year.

In line with celebrations to mark the WED, Rwanda hosted the launch of WED in conjunction with the celebration of the annual *Kwita Izina* Ceremony (which means giving names to baby gorillas). This uniquely Rwandan event aims to create awareness for the conservation of the endangered mountain gorillas, which is in line with this year's WED theme.

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# From the desk of the Director General Many Species. One Planet. One Future.

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On 5 June at Kigali, Rwanda, we again recognised World Environment Day (WED). The theme of 2010 WED is apt : "Many Species. One Planet. One Future." This theme admirably dovetails with the United Nations' declaration of Year 2010 as "International Year of Biodiversity". We, humankind must therefore make every serious effort to increase our understanding of biodiversity and play an active role to ensure we remain an integral part of nature and not become its nemesis.

Biodiversity is a term given to all the varieties of life on Earth in all its myriad forms. Scientists working through the centuries in places and habitats far, wide and deep have succeeded in identifying some 2 million different species of life forms thus far. Many scientists reckon there are anything from 5 to 10 million species on Earth. Our journey of discovery has still a long way to go! But the nub of the problem is that humankind has a marked propensity to destroy that which we do not appreciate nor understand fully. After all, biodiversity's greatest challenge is due entirely to one strong competitor- human.

Biodiversity loss primarily comes from human induced pressures and threats. These can be summarised as habitat loss and destruction, alteration in ecosystem composition, introduction of invasive alien species, over-exploitation, pollution, contamination and global climate change. These pressures work on all three levels of biodiversity, namely genetic, species and ecosystem diversity which have all been severely affected. But at no time than in the recent past and present have these threats to biodiversity been so catastrophic. A shocking recent example of humankind's action that can destroy biodiversity is BP's leaking deep sea oil well in the Gulf of Mexico. That leak is also a startling reminder that often human beings set in motion events that they have very little control over. The world and the affected communities watched helplessly as things got worse by the day. We must take note that the waters around us including the narrow Straits of Malacca have suffered from oil spills from time to time *albeit* on a smaller scale. Nevertheless such spills have had a severe impact on the livelihood of the local community and on marine life.

In the past, we human beings have cleared much of the original forest, drained half the world's wetlands, depleted three-quarters of all fish stocks and emitted enough heat trapping gases to keep our planet warmer than it should be for centuries to come. And much of these unsustainable activities are related to the most influential economic force on Earth- industrial scale businesses. Of course not all such enterprises have a dismal record. More and more businesses across the globe are adopting practices that are sustainable and hence playing a key role in preserving biodiversity. For examples, the initiatives of the following businesses are impressive and need mention - Adobe Systems, Eco Straps, Askash Ganga and Phoenix Organics. It is our fervent hope that Malaysian companies make a name for themselves in helping preserve biodiversity in the near future. Right now, such companies as these are in the minority. We simply need a majority of companies in Malaysia and the world to be green, sustainable and environmentally responsible.

At this juncture we must ask ourselves: 'Have we done enough as a country within the wider Global Environmental Responsibility (GER) matrix which affects the environmental ecosystems of the world? Presently Malaysia has signed two Multilateral Environmental Agreements (MEAs). These are the Stockholm Convention on Certain Persistent Organic Pollutants (POPs Convention) and the ASEAN Agreement on the Conservation of Nature and Natural Resources. We have yet to ratify these agreements but strong support exists for its eventual ratification. On the domestic front, we are currently engaged in reviewing several pieces of legislation with a view towards improving our GER performance. The legislation being reviewed are the National Forestry Act 1984, National Parks Act 1980, Land Conservation Act 1960, Environmental Quality Act 1974, Fisheries Act 1985, National Land Code 1965 and the Protection of Wildlife Act 1972. The review will take into account the global body of new knowledge about biodiversity and sustainability in the region and across the earth. There is much that we can and must do in the days, months and years ahead of us.

In all of this work, we must be guided by the recent, wise and succinct words of the President of the Republic of Maldives in his WED message : "If we lose nature, we lose ourselves".

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#### Why Rwanda?

Rwanda is located in Central Africa, and it is a country having a combination of environmental richness and biodiversity. It is also home to a third of the world's remaining 750 mountain gorillas. Rwanda's newly evolving Green Economy and visionary green initiatives are among the reasons it is placing itself in the best position to host WED 2010. Rwanda is internationally renowned for implementing a ban on non-biodegradable plastic bags and other nationwide environmental measures that effectively control pollution, conserve biodiversity, and restore productive ecosystems. A variety of activities are planned for the WED celebration, aiming to involve Rwandans and people around the world to take part actively in environmental protection.

The significance of the selection of Rwanda can be seen from the fact that it is a country that has regions which are biologically diverse. This rich biodiversity is mainly conserved in protected areas (three national parks, natural forests, wetlands), constituting almost 8% of the total land area. It is home to some 40% of the continent's mammal species (402 species), a huge diversity of birds (1,061 species), reptiles and amphibians (293 species), and higher plants (5,793 species). Despite its size and high population density, almost 20% of national territory is conserved as protected areas. According to UNEP, Kigali is regarded as one of the cleanest cities in Africa.

#### Rwanda's green initiatives include:

- Environment organic law promulgation
- Establishment of Rwanda Environment Management Authority
- Biodiversity and wildlife policies development
- Programmes aimed at halting the effects of climate change, including preserving wetlands and forests as well as a countrywide campaign for tree-planting
- Protection of river banks and lake shores for biodiversity conservation
- Tourism revenue-sharing scheme for communities surrounding Protected Areas.
- A country-wide ban on non-biodegradable plastic bags
- Nationwide community works known as Umuganda which include activities like litter cleanups, tree-planting and greening of cities.
- Trash collection in Kigali, with the litter recycled into cooking bricks as an alternative to firewood
- Development of renewable energies (biogas, solar, hydropower) and rainwater harvesting in schools, households and in public and private institutions

In his WED message, the United Nations' Secretary General, Ban Ki-moon, stressed the importance of halting the mass extinction of species resulting from human activities, and raising awareness about the vital importance of the millions of species that inhabit the planet. The health, well-being and sustainable future of human beings depend very much on this intricate, delicate web of ecosystems and life.

#### Themes of World Environment Day 1987 - 2010

Year	Host Country	Major Theme	
1987	Kenya	Environment and Shelter: More Than a Roof	
1988	Thailand	When People Put the Environment First, Development Will L	ast
1989	Belgium	Global Warming; Global Warning	0005 🍆 🚺
1990	Mexico	Children and the Environment	The Elevinement
1991	Sweden	Climate Change. Need for Global Partnership	
1992	Brazil	Only One Earth: Care and Share	Give carth a chance
1993	People's Republic of China	Poverty and the Environment - Breaking the Vicious Circle	
1994	United Kingdom	One Earth One Family	
1995	South Africa	We the Peoples: United for the Global Environment	act A Co
1996	Turkey	Our Earth, Our Habitat, Our Home	ALCON LES DE L
1997	Republic of Korea	For Life on Earth	8
1998	Russian Federation	For Life on Earth - Save Our Seas	
1999	Japan	Our Earth - Our Future - Just Save It!	The Work of GREEN CITIES
2000	Australia	The Environment Millennium - Time to Act	www.unep.org
2001	Cuba	Connect with the World Wide Web of Life	5 JUHE 2001
2002	People's Republic of China	Give Earth a Chance	WORLD ENVIRONMENT DAY - 5 JUNE 2004
2003	Lebanon	Water – Two Billion People are Dying for It!	WANTER
2004	Spain	Wanted! Seas and Oceans – Dead or Alive?	TI SLAT & MUS
2005	U.S.	Green Cities – Plan for the Planet!	SEAS AND OCEANS
2006	Algeria	Deserts and Desertification - Don't Desert Drylands!	DEAD OR ALIVE?
2007	Norway	Melting Ice – a Hot Topic?	UNITED NATIONS SEVIEONMENT PROGRAMME
2008	Mexico	Kick The Habit - Towards a Low Carbon Economy	
2009	New Zealand	Your Planet Needs You - UNite to Combat Climate Change	
2010	Rawanda	Many Species. One Planet. One Future	

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Source: http://www.unac.org/en/news\_events/un\_days/international\_years.asp

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## Understanding Biodiversity

#### **Biological Diversity Defined**

In order to understand better the theme for this year's WED, let us clearly define biological diversity. This is the term given to the variety of life on Earth. This includes all organisms, species, and populations; the genetic differences among these; and their complex web of communities and ecosystems. This also refers to the interrelatedness of genes, species and ecosystems and their interactions with the environment. Based on this understanding, 3 levels of biodiversity are recognised: [1]

- Genetic diversity which is all the genes contained in all living species including plants, animals, fungi and microorganisms
- 2. Species diversity which is all the different species, as well as the differences within and between different species.
- Ecosystem diversity which is all the different habitats, biological communities and ecological processes, as well as variation within individual ecosystems.

The biodiversity found on Earth today consists of many millions of distinct biological species, and is the product of billions of years of evolution, shaped by natural processes and by the influence of humans. Human beings are not only an integral part of this web of life, but are also completely dependent on it. This diversity is often understood in terms of the wide variety of plants, animals and microorganisms.



**Genetic diversity** refers to the total number of genetic characteristics in the genetic make-up of a species.



**Species diversity** is a measure of the diversity within an ecological community that incorporates both species richness (the number of species in a community) and the evenness of species' abundance.

Scientists have only managed to identify about 2 million species so far. Most of these are small creatures such as insects and it is reckoned that there are actually about 13 million species, though estimates range from 3 to 100 million! What this means is that there is a lot that we do not know about our planet or who we share it with. But what we do know is that humans are among only a handful of species whose population is growing, while most animals and plants are becoming rarer and fewer.

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#### **Biodiversity Threatened**

Biodiversity is facing a great challenge due almost entirely to one strong competitor – human beings. A rapid increase in global human population has resulted in major threats to our natural environment and many of its species. Humans have applied skills to alter nature in such abrupt ways that individual species and entire ecosystems are struggling, and often failing to adapt to the new conditions. When an area is suddenly destroyed or even disturbed, the chances that all species will have time to seek refuge within a reasonable distance to survive are extremely limited.

Biodiversity loss in our natural world occurs due to several threats. Some of these are :

- Habitat loss and destruction linked to human-induced pressures on land.
- Alterations in ecosystem composition caused by alterations within species groups or within the environment.
- Invasive alien species introduction of exotic species that replace or cause local and native species to become extinct.
- Over-exploitation caused by actions such as over-hunting, over-fishing or over-collecting of a species; changing human consumption patterns is a key reason for this unsustainable exploitation of natural resources.
- Pollution and contamination cause irreversible damage to species and varieties.
- Global climate change if species and populations are not provided with enough time to adapt to changing climatic conditions.

Since no one knows exactly how many species there are, it is difficult to ascertain the speed of the extinction rate. It has, on the other hand, been estimated that 5-10 species may be disappearing everyday. Some even say that this number is an understatement. This would add up to several thousands species every year! [2]

In a 2009 study conducted by the International Union for Conservation of Nature (IUCN), it was



revealed that 21% of all known mammals, 30% of all known amphibians, 12% of all known birds, 28% of reptiles, 37% of freshwater fishes, 70% of plants and 35% of invertebrates are under threat. [1]

Extinctions have been occurring naturally for as long as earth has existed. The most commonly mentioned mass extinction was when the dinosaurs perished approximately 65 million years ago. The difference nowadays is that present extinction rates are several thousands of times more rapid than before. It is obvious that we do need land to grow crops and we do need construction material to build houses for people to live in and, of course, we need to find ways to feed all the peoples of the world. The problem is just how we could do this without causing more disturbance to nature, and what the results may be if we ignore the conservation of nature in trying to solve these problems.



#### Need to Conserve Biodiversity

Therefore, protecting biodiversity is in our self interest. We may not realise that the beetle in our backyard garden or grass growing on the roadside has a fundamental connection with us. The stark reality is that it does. Even when one species is taken out of the intricate web of life, the results can sometimes be catastrophic.

Some of the reasons why we should conserve biodiversity are discussed below: [3,4]

#### Medicine and Scientific Research

With the loss of plant and animal diversity, we lose opportunities to discover new medicines that could end the suffering of millions of people and save national economies billions of dollars each year in treatment costs.

Both in traditional and modern medicine, the potential of Nature has been well recognised for many years with the use of more than 70,000 plant species. Ayurveda, the Indian ancient medicine system, prescribes herbal medicines for several ailments. Many cancer-fighting drugs continue to be developed from plants.



Biodiversity is essential as a source of natural medicine

Over the years, animals have served as important medical research models helping us to understand and fight diseases. Some of them are also sources for important new medicines.

It is learnt that hibernating polar bears have some compounds in their bloodstreams that may allow us to prevent and treat osteoperosis. Cone snails are known to be a source of a painkiller compound, more potent and safer than morphine. Yet, it lives in coral reefs that are threatened by climate change. 'For how long can it survive' is the question.

The Waxy Monkey Frog from South America manufactures potent antibiotics in its skin that attack bacteria and fungi, including some that cause infections in people suffering from HIV/ AIDS. And yet again, a third of all known amphibian species are threatened with extinction.

#### Agriculture

Without biodiversity, we would run out of food. Since agriculture began some 12,000 years ago, approximately 7,000 plant species and several thousands animal species have been used for human consumption.



Biodiversity helps maintain pollinating insect diversity

Biodiversity is, therefore, not only essential to global food security and nutrition, it is important for several poor households during times of crisis, providing income opportunities and sustaining agriculture.

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Natural predators such as wasps and birds help reduce pests that destroy crops. Many of the world's staple crops are pollinated by insects, birds, bats and other animals. A variety of living organisms maintain our soils, while genetic diversity helps provide resistance to diseases and pests.

Unfortunately, industrial-scale agriculture has led to a dramatic reduction in genetic diversity within the animal and plant species used for food. Only a handful of species are now used to produce 90% of all human food. As a result of this homogenisation of the food industry, thousands of non-commercial animal breeds and crop varieties have disappeared, along with the valuable genetic diversity they contained.

#### **Business and industry**

A wide range of industrial materials are derived directly from biological resources. These include building materials, fibres, dyes, resins and oil. There is enormous potential for further research into sustainably utilising materials from a wider diversity of organisms. In addition, biodiversity, and the ecosystem of goods and services it provides, is considered to be fundamental to healthy economic systems.



Biodiversity brings fortune we cannot afford to lose

The degree to which biodiversity supports business varies between regions and between economic sectors; however, there is universal recognition for the relationship of biodiversity to issues of resource security (energy, water quantity and quality, timber, paper and fibre, food and medicinal resources etc.). As a result, the loss of biodiversity is increasingly recognised as a significant risk factor in business development and a threat to long term economic sustainability.

Coral reefs support the richest marine biodiversity in the world. It is not only fellow species that depend on them but also human beings because

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these reefs provide food, storm protection, jobs, recreation and other sources of income for more than 500 million people worldwide.

#### Other ecological services

Biodiversity provides many ecosystem services that are often not readily visible. It plays a part in regulating the chemistry of our atmosphere and water supply. Biodiversity is directly involved in water purification, decomposition of wastes, recycling nutrients, providing fertile soils and providing a stable climate.



Biodiversity is necessary as a provider of natural services

Experiments with controlled environments have shown that humans cannot easily build ecosystems to support human needs; for example insect pollination cannot be mimicked by human-made construction – an activity that can cost tens of billions of dollars in ecosystem services per year to humankind.

The stability of ecosystems is also related to biodiversity - a higher biodiversity provides for greater stability over time, reducing the chance that ecosystem services will be disrupted as a result of disturbances such as extreme weather events or human exploitation.

#### Leisure, Cultural and Aesthetic Value

Many people derive value from biodiversity through leisure activities such as hiking, birdwatching or natural history study. Biodiversity has inspired musicians, painters, sculptors, writers and other artists. Many cultural groups view themselves as an integral part of the natural world and show respect for other living organisms.

Popular activities such as gardening, caring for aquariums and collecting butterflies are all strongly dependent on biodiversity. The number of species involved in such pursuits is in the tens of thousands, though the great majority does not enter mainstream commercialism.

The relationships between the original natural areas of these often 'exotic' animals and plants and commercial collectors, suppliers, breeders, propagators and those who promote their understanding and enjoyment are complex and

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poorly understood. It seems clear, however, that the general public responds well to exposure to rare and unusual organisms – they recognise their inherent value at some level.



Biodiversity species in your garden

## How Might Biodiversity Change in Future?

The Millennium Ecosystem Assessment (MA) is a research programme that focuses on ecosystem changes over the course of decades, and projects those changes into the future. The MA has developed four plausible scenarios to explore the future of biodiversity and human well-being until 2050 and beyond [5, 6]. The scenarios are:

- Global Orchestration This scenario depicts a globally-connected society that focuses on global trade and economic liberalisation and takes a reactive approach to ecosystem problems. Under this scenario, poverty is reduced, but a number of ecosystem services deteriorate.
- Order from Strength This scenario represents a regionalised and fragmented world, concerned with security and protection, and which takes a reactive approach to ecosystem problems.
- Adapting Mosaic In this scenario, regional ecosystems are the focus of political and economic activity. Societies develop a local strongly proactive approach to the management of ecosystems.
- Techno-Garden This scenario depicts a globally-connected world relying strongly on technology to provide or improve the provision of ecosystem services. Under this scenario, environmental problems are dealt with proactively in an effort to avoid problems.

It should be noted that none of the scenarios represents a 'best' path or a 'worst' path. There could be combinations of policies and practices that produce significantly better or worse outcomes than any of these scenarios. The future will represent a mix of approaches and consequences as well as events and innovations that could not be imagined at the time of writing the assessment report.

### Protecting Biodiversity

As we celebrate the 2010 WED, we need to be

cognizant of some of the initiatives available to protect and conserve biodiversity. [7]

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Conserve Protected Areas such as national parks, marine reserves, wilderness areas that are home to sensitive habitats. But these areas are not sufficient in themselves to protect the full range of biodiversity, notwithstanding the challenges in enforcement. To be successful, sites labeled as 'Protected Areas' need to be carefully chosen, to ensure that different types of ecosystems are well represented, and that the areas are well designed and effectively managed. Climate change will increase the risk of extinction of certain species and change the nature of ecosystems. Hence, precautionary species conservation strategies must be in place to incorporate adaptation and mitigation aspects for this threat.

**Provide Economic Incentives** such as direct payments for ecosystem services or transfers of ownership rights to private individuals to conserve biodiversity and to use ecosystem services in a sustainable manner. These incentives can be effective market tools provided trade-offs between biodiversity, economic gains and social needs are realistically acknowledged.

**Tackle Invasive Species** through costeffective approaches of prevention and early intervention. Once an invasive species has become established, its control and particularly, its eradication through the use of chemicals or through the introduction of other species is not necessarily effective and is extremely difficult and costly. Biological control of invasive species through the introduction of other species has also been attempted, but can lead to unexpected results such as the extinction of other local species.

Integrate Biodiversity into the agriculture, fishery, and forestry sectors so that it is effectively conserved and sustainably used. Many companies are beginning to show greater corporate responsibility and are preparing their own biodiversity action plans.

**Extend Strong Institutional Support** at all levels to the cause of biodiversity conservation and the sustainable use of ecosystems. International agreements need to include enforcement measures and take into account impacts on biodiversity and possible synergies with other agreements. Most of the direct actions to halt or reduce biodiversity loss need to be taken at local or national level. Suitable laws and policies should be developed by central governments to enable local levels of government to provide incentives for sustainable resource management.

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Enhance Awareness of Society about the benefits of conserving biodiversity, and urge them to consider trade-offs between different options in an integrated way, to help maximise benefits to society. Ecosystem restoration is generally far more expensive than protecting the original ecosystem, but this is becoming increasingly important as more areas become degraded.

#### Address Direct and Indirect Drivers of Biodiversity Loss.

Possible actions to better protect biodiversity and ecosystem services include eliminating harmful subsidies that promote excessive use of certain ecosystem services, promoting sustainable intensification of agriculture, slowing and adapting to climate change, limiting the increase in nutrient levels in soil and water due to the use of fertilisers, assessing the full economic value of ecosystem services and the cost of degradation in decision-making processes, and increasing the transparency of such decision making processes.



#### Meeting the 2010 Biodiversity Targets

Back in 2002, Governments set the year 2010 as a deadline to achieve a significant reduction in the rate of loss of biodiversity for reducing poverty. Now is actually the time we could look back and say, yes, we've done it, and that biodiversity on Earth, is no longer threatened. But unfortunately, all assessments of progress to date indicate that we are far from reaching this goal.

The 2010 WED theme, "Many Species. One Planet. One Future." echoes the urgent call to conserve the diversity of life on our planet. A world without biodiversity is a very bleak prospect. Millions of people and millions of species all share the same planet, and only together can we enjoy a safer and more prosperous future.

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# Reiterating the Importance of Biodiversity

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Our natural world is a very unique system, where different organisms and species coexist organically in a wide range of different environments ranging from hot deserts, through the lush green rainforests, the freezing areas of the tundra and to the ocean depths. This colourful variety of life forms existing within an ecosystem or biome is known as biodiversity. It is also common to refer to biodiversity in three levels, namely genetic diversity, species diversity and ecosystems diversity, and their interactions with the environment.

We are an integral part of nature, and our life is closely linked to biodiversity. In any part of the world, humans live with a huge variety of other animals and plants in different environments, relying greatly on this diversity of life as a reliable provider of food, medicine, fuel and other essential items that they cannot live without. However, this rich diversity is under serious threat, and biodiversity loss can be classified as one of the world's most critical issues for humankind to take note.

Human activities have been one of the major reasons contributing to the deleterious effects on biodiversity. The urgent need to see development has seen human beings moving forward at a rapid rate, often choosing the quickest path to achieve the goal by clearing off the original forest and draining off wetlands, practising extensive mechanised agriculture with widespread use of pesticides, weedicides and chemicals, reclaiming land from the sea etc. This leads to subsequent negative effects such as depleting fish stocks, dimmishing clean water supply, and development of heat-trapping gases that contribute to global warming. These losses are irreversible, impoverish us and damage the life support systems we rely on every day.

Scientists have estimated that there are approximately 5 to 10 million species throughout

the world, and only a fraction has been discovered and identified, while many of them may become extinct before they are even discovered. It is reasonable to claim that human beings cause rapid decline of the species at a rate many times faster than the extinction occurring in a natural way.



Many of us may not have been aware that these negative effects are slowly destabilising our ecosystems and weakening the ability of the living systems to counter growing environmental threats such as climate change, extinction and pollution. Therefore, it is important to relate biodiversity to everyone's daily needs and empower them with information and responsibility to prevent further threats to biodiversity.

## International Year of Biodiversity 2010

The United Nations Environment Programme (UNEP) is a United Nations entity that plays an important role in coordinating environmental policy consensus by keeping the global environment under review, bringing emerging issues and addressing environmental issues at the global and regional levels.

In 2002, Governments met and set 2010 as a deadline to achieve a significant reduction in the rate of loss of biodiversity and ecosystems. By this year, it is desired to see that biodiversity is no longer threatened. Therefore, 2010 has been marked as the International Year of Biodiversity by the United Nations to reflect on what have

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been achieved in the eight years, and what needs to be done in the coming years to change or reverse the declining trend.

The official launch of the International Year of Biodiversity 2010 was held in Berlin, and was officiated by German Chancellor, Angela Merkel on 11 January 2010. She called upon the international community to invest more in protecting species and to increase efforts to build an international network of wildlife protection areas. Year-long activities have been lined up with the aim of encouraging the public to double their efforts to reduce the rate of biodiversity loss, while acknowledging the importance of biodiversity to human well-being, as well as reflect on the achievements to safeguard it.

Malaysia, rated among the twelve most bio-diversed countries in the world, has vast tropical rainforests which are home to resources and a germplasm collection that reportedly numbers some 13,050 species. Some 1,200 species of medicinal plants have also been identified. The Ministry of Science, Technology and Environment has taken the initiative to draw up a National Policy on Biodiversity. The aim of this Policy is largely to strengthen and regulate the conservation and sustainable utilisation of our rich biodiversity.



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# Malaysia's Commitment to Global Environmental Responsibility

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World Environment Day (WED) 2010 is an important international event. The theme for the year 2010 is "Many Species. One Planet. One Future." In short, the message for WED 2010 can be interpreted to mean environment sustainability in a K-economy era.

#### Strategic Environmental Sustainability Roadmap

**Environmental Responsibility and Obligations** Malaysia has declared its message clearly since the defining year in 1981 when the nation through the ASEAN platform made a joint declaration pertaining to the environment known as the Manila Declaration on the ASEAN Environment 1981.

ASEAN's commitment [1] to Global Environmental Responsibility (GER) has seen enduring contribution [2] from all ASEAN member countries in various forms and degrees despite the wide gap in economic achievement between founding members [3] and new member countries. In retrospect, there is, of course, room for further improvement, if not a revamp.

Climate Change is a phenomenon within the wider Global Environmental Responsibility (GER) Matrix [3] which affects the environmental ecosystem of the world. In Malaysia, climate change is beginning to be perceived as a serious threat to the national economy. Independent of scientific evidence indicating a global degradation in world climate or otherwise, there is unanimous understanding that there is a need for concerted efforts to address environmental concern beyond the climate change phenomenon.

A paradigm shift is needed in forging a new instrument of international co-operation within the wider framework of Free Trade Agreements [4] and joint conviction shared by stakeholders such as the Organisation for Economic Cooperation and Development, major banking bodies (i.e. International Monetary Fund, World Bank, Asian Development Bank) and leading industrial/corporate entities. This is to ensure adherence to the various objectives and missions under the WED's themes/initiatives.

#### Commitment towards Green Technology Initiatives

Malaysia has taken cognisance of this fact and has since taken proactive efforts and incentives to remedy this defect via national environmental initiatives and enhanced implementation.

Green energy is not something new. This initiative has seen action since the discovery of the depletion of the ozone layer and global climate change as a direct impact of green house effect on a worldwide scale. However, various international conventions/agreements on the reduction of green house effect will remain forever on glossy papers if countries around the world are not serious in committing themselves towards real implementation within national boundary.

The recent 2010 Budget Speech by Dato' Seri Najib Tun Abdul Razak, the Prime Minister of Malaysia provided for the establishment of a Green Technology Financing Scheme to the tune of about RM1.5 billion to enhance the creation and use of various forms of Green Technology in the Malaysian industry.

For green technology, the Government will



provide funding of about RM1.5 billion in the form of soft loans to companies which emphasise the creation and utilisation of green technology. For suppliers, the maximum financing is RM50 million and for consumer companies, RM10 million.

In terms of green technology financing, the Government will provide a guarantee of up to 60% on the financing amount via Credit Guarantee Corporation Malaysia Berhad with the remaining 40% financing risk to be borne by Participating Financial Institutions (PFIs). Apart from that, the Government will bear 2% of the total interest/profit rate.



#### **GBI** Initiative

In Malaysia, the recent introduction of the Green Building Index (GBI) [5] and related 'Green Rule'[6] based initiatives are a result of improved awareness of our environmental responsibility. Efforts to tackle, resolve, maintain and preserve the integrity of the global environmental inter–connectivity are geared towards a better global environment.

Notwithstanding these provisions, the take-up rate has been slow due to underlying problems. The industrial infrastructure itself is essentially non-green and hence the transformation will take years before true green technology can be easily created and used by the consumers and industry and consequently take the paradigm shift and infrastructural conversion into a green tech platform.

#### Development of Renewable Energy (RE)

The other impediment lies in developing wind, water and solar (WSS) energy or also known as RE energy. It is tantalising to note the possible advantages and benefits offered by WWS energy, but it remains to be seen whether it can be a practical alternative to current

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fossil fuel-based energies, including nuclear energy, in ASEAN, because the technologies involved are still in the rudimentary R&D stage and commercialisation of WWS energy is still a long way off. There is no tangible economic rationale for the industry in Malaysia, and ASEAN for that matter, to take any initiative to develop WWS energy technologies. They cannot be faulted.



#### Recommendations for Implementation Multilateral Environmental Agreements

(MEAs) Compliance Presently, Malaysia has signed but has yet to ratify two MEAs namely the Stockholm

Convention on Certain Persistent Organic Pollutants (POPs Convention) and the ASEAN Agreement on the Conservation of Nature and Natural Resources. There is positive anticipation that Malaysia will give her response in due course.

#### **Domestic Legislative Implementation**

On the domestic front, Malaysia is currently engaged in reviewing several legislations with a view towards improvement its GER performance. The following are laws that have been identified for environmental review.

- National Forestry Act 1984
- National Parks Act 1980
- Land Conservation Act 1960
- Environmental Quality Act 1974
- Fisheries Act 1985
- National Land Code1965
- Protection of Wildlife Act 1972

### Integrated Co-operation between Public and Private Entities

This approach calls for cohesive cooperation between Federal and State level decision making processes in environmental development to be assessed along the line of environmental directions and standards. This includes government and the private sector being the effective co-efficients in enhancing industrial co-operative ventures. Such a move could enhance the success rate in relation to the underlying thrusts within The National Energy Policy, The National Biotechnology Policy and National Environment Policy.

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#### Assistance in National Implementation of the ASEAN Agreement on Trans-boundary Haze Pollution

Full implementation of the ASEAN Agreement on Trans-boundary Haze Pollution has yet to be achieved simply because the major stakeholder, i.e., Indonesia requires time to put into action Paragraph 6 (National Plans) under the ASEAN Agreement on Transboundary Haze Pollution.

Affirmative measures expressed in the form of policies and strategies delineated in Paragraph 6 of the said ASEAN Agreement have seen little action from the Indonesian side specifically in the area of national legislative 'preventive measures' provision which obliges the performance of specific national plans of action.

The subsequent non-ratification and nonimplementation of the National Plans under the said ASEAN Agreement on Trans-boundary Haze Pollution has rendered the agreement infamously 'good on paper only' to the dismay of Malaysia, Singapore and Brunei member states whose economies have been directly affected by the annual cross-boundary haze pollution emanating from Indonesian territory.

#### Conclusion

Implementing a true policy for a Sustainable Environmental Framework in the ASEAN Region remains a real challenge based on past histories and current cultural and socioeconomic reality.

Given the current international industrial demands and environmental standards in relation to compliance requirements, environmental-friendly strategies and green policies must be holistically adopted and implemented within national boundaries in order to achieve true global environmental sustainability. Towards this end, Malaysia has performed remarkably well.

Malaysia's sustained contribution towards the ASEAN regional environmental co-operation is crucial but hampered by the absence of cohesive joint implementation obligations from other ASEAN member countries. Intra-ASEAN environmental co-operation is still very much

fragmented from an ASEAN environment policy framework perspective. A global effort in the direction of true environmental sustainability calls for concrete regional commitment that must be reflected in joint partnerships, consultative exercises and a sincere political will in ASEAN.

Within the ASEAN environmental framework, Malaysia remains committed and will continue to work on outstanding areas of attention with a view to uplift her GER performance to the next level.

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- See ASEAN Charter: Chapter I- Purposes And Principles, Charter of the Association Of Southeast Asian Nations, Article 1, Purposes: Paragraph 9. To promote sustainable development so as to ensure the protection of the region's environment, the sustainability of its natural resources, the preservation of its cultural heritage and the high quality of life of its peoples.
- 2 See the establishment of ASEAN Regional Center for Biodiversity Conservation; ASEAN Environment Year 1995 and 2000; ASEAN Environment Awards; ASEAN Specialised Meteorological Centre (ASMC); ASEAN Harmonized Environmental Quality Standards for Ambient Air and River Water Qualities 1994; and various ASEAN-UNDP/ASP5 Regional Training Seminars on Environment such as ISO 14000, Ecolabelling and Life-Cycle Analysis 1997, Polluter Pays Principle (PPP) 1997, Toxic and Hazardous Wastes Management 1997, etc.
- 3 Global Environmental Responsibility (GER) is a concept created and advocated by the writer which emphasises the wider global environmental impacts and consequences/ implications beyond the restricted CSR purviews and objectives.
- 4 This includes the declaration in the 'ASEAN Economic Ministers Statement on the Doha Development Agenda', Bali, Indonesia, 3 May 2008, at http://www.aseansec.org/21500. htm
- 5 'The Green Building Index (GBI) is Malaysia's industry recognised green rating tool for buildings to promote sustainability in the built environment and raise awareness among Developers, Architects, Engineers, Planners, Designers, Contractors and the Public about environmental issues and our responsibility to the future generations'. For details, see 'What Is The Green Building Index?', at http://www. greenbuildingindex.org/

See speech by YB Dato' Sri Peter Chin Fah Kui at the GBI NREB Launch, Launch of GBI Existing Building Rating Tool at http://www.gbimalaysia. com/

6 The 'Green Rule' is a concept created by the writer which advocates a active application of Environmental Index Consideration and Environmental Impact Factor within the economic spectrums and social endeavours. 5

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# Oil Spills: A Threat to Biodiversity

The world's oceans constitute more than 70% of the surface of our planet and provide a broad and life-supporting range of ecosystem services and goods upon which humankind depends. The seas are important to us but the diversity of life in the oceans is under ever-increasing strain. Over-exploitation of marine living resources, climate change, and pollution from hazardous materials and activities are posing a grave threat to the marine environment.

By virtue of its geographical location, the seas bordering Malaysia namely the Straits of Malacca

and the South China Sea serve as important sea-lanes linking the West with the Far East. In recent years, there has been a steady increase in the volume of vessel traffic along the Straits of Malacca partially due to increased oil trading. Hence, operational or accidental oil spills, spills from maritime casualties namely vessel collision or grounding as well as spills from deliberate illegal discharge of oil sludge/oily waste are among our concerns. The scene is

somewhat dissimilar in the South China Sea where operational oil spills resulting from rampant off-shore oil and gas explorations activities is a predominant apprehension.

#### Oil Spills in Malaysia

Around mid-October 1997, the Straits of Malacca suffered from the largest spill to date due to a collision between the loaded East bound tanker *Evoikos* with an empty West bound tanker *Oraphin Global*. Although the accident occurred in the Singapore waters, the 20.5 mile long slick drifted into the Malaysian and Indonesian waters affecting coastlines of west Coast Peninsular Malaysia. In most recent years since 2007, however, we have been made aware by the media of reports on oil sludges from unknown sources landing on beaches in Southern Johor especially in Kota Tinggi District, affecting the livelihood of the local community and fishermen.

Despite improvements in safety of navigation especially along the Straits of Malacca and Singapore coupled with diligent maritime enforcement and surveillance efforts in our waters, maritime casualties resulting in oil spills continue to occur. More recently, on 25 May 2010, the collision between a tanker *MT Bunga Kelana* 3 carrying light crude oil collided with a bulk carrier *MV Waily* about 4 nautical miles off the coast of Tanjung Setapa, Pengerang, Johor, resulting in about 2,500 metric tonnes of light crude oil spilling into the sea affecting both waters of Singapore and Malaysia. In Singapore, the media reports that an estimated 7.2 km of beaches and rock bunds along Singapore's east coast as well as a canal, have been affected by the slick. On the Malaysian side, despite all efforts to contain and recover the oil at sea, slicks of oil were washed ashore affecting approximately 18 km of beaches along the South and South east of Kota Tinggi District from Tanjung Pengelih to Tanjung Punggai. Close to 200 fishermen were reportedly affected by the incident.

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#### Behaviour of oil in the sea

#### Massive World Oil Spills

Of all the massive oil spills in the world, the 1989 Exxon Valdez oil disaster in Alaska and the BP Gulf of Mexico oil disaster recently must surely be singled out for mention. The Exxon Valdez disaster is estimated to have poured a finite amount of oil into the sea and caused irreparable damage to Alaska's Prince William Sound. Scientists studying the recent BP disaster believe that the amount spilled by Exxon Valdez was only one-seventeenth of the oil that gushed from a ruptured BP well in the Gulf and coated the shoreline. Compounding the effects of the oil is the seven million litres of chemical dispersants used to prevent fouling of the shoreline. What is feared by marine scientists is the decades long 'cascading' effect on marine life leading to a shift in the biological network in the Gulf of Mexico.



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Emulsified oil

#### Behaviour of Oil in the Sea

Petroleum or crude oil is a naturally-occurring, toxic, flammable liquid consisting of a complex mixture of hydrocarbons of various molecular weights, and other organic compounds, that are found in geologic formations beneath the Earth's surface. Each petroleum variety has a unique mix of molecules, which define its physical and chemical properties, like colour and viscosity.

Assessing the toxicity of oil can be a tricky business. The main difficulty is that 'oil' is typically a mixture of many different chemicals.

Proportions in the mixture vary even within a single category of oil, like crude oil. For example, Arabian crude oil differs in composition from Louisiana crude oil, which differs from Alaska North Slope crude oil.

When oil is spilled, most of the volatile compounds evaporate quickly. The oil, however, remains floating on the surface of the water, and starts to spread, forming a very thin film which can cover large areas of water. A small

percentage undergoes process of dispersion, sedimentation, biodegradation and dissolution. Over time, as the oil weathers, it emulsifies and forms a chocolate mousse-like appearance.



Mangrove swamp affected by oil

#### Effects of Oil Spill on the Marine Ecosystem

The marine ecosystem is highly complex and experiences natural fluctuations in species composition and distribution. The extent of damage on the marine life can therefore be difficult to detect against this background variability. Some scientists argue that the key to understanding the extent of damage and its importance is to assess whether spill effects result in a downturn in breeding success, productivity, diversity and the overall functioning of the system.

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Oil spills largely affect marine life which live, hunt, or travel in the area covered with oil. Different types of marine life are impacted differently, depending on their physiology and habits. The compounds left behind after the volatile compounds play a large part in why oil spills affect marine life, since many of them are toxic, dense, and bio-accumulative. When oil spills affect marine life, it usually happens at multiple levels of the food chain, requiring a lot of work to fix the problem.

One of the most direct ways in which oil spills affect marine life is by essentially suffocating plants and animals. Marine plants can be covered in a film of oil which prevents oxygen and water exchange, causing the plants to die. Marine life which feed on this vegetation will in turn struggle to survive. Coatings of oil on the flesh of birds and mammals can literally kill them through suffocation. Oil spills also affect marine life such as birds by stripping the water resistant coating from their feathers. A bird weighed down by oil may have difficulty flying, and could develop hypothermia as a result of exposure to extremely cold water. Bird mortality is recorded to occur during most spills and in some major spills, breeding colonies have been seriously depleted.

Marine mammals also suffer, as oil can remove water resistant compounds from the coats of furred marine life like otters and seals. Some animals eat the oil while trying to clean it off their fur or feathers, or while scavenging on dead animals. Oil is toxic when ingested and can cause sickness or death and in our case, especially to the famous dugong, a protected marine mammal in Malaysia that can potentially feed on contaminated seagrass beds. Oil spills also affect marine life like filter feeders by concentrating in the flesh of these animals. Clams, mussels, and oysters may quickly accumulate toxins which can kill the animals or be passed on along the food chain. Animals that rely on these filter feeders for food may become sick and die as a result of consuming them. In the long term, oil spills affect marine life by interfering with the ability to breed, reproduce, grow, or perform other vital functions.

Shorelines, more than any other part of the marine environment, are exposed to the effects of oil. Smaller organisms, such as aquatic inverte-brates (barnacles, periwinkle snails, polychaete worms, clams, etc.), can be smothered by a thick layer of oil washing ashore. These organisms are often important indicator species whereby their presence, distribution and number are used by scientists as indicators of the overall health of an ecosystem.

#### How Clean is Clean?

Through numerous global catastrophic spills in the past such as the infamous Exxon Valdez oil spill, scientists now know that sometimes the attempts to clean up an oil spill can also indirectly cause harm to some of the resources they are trying to protect. For example, using hot water or over-utilisation of chemicals dispersants to remove oil slicks can cause harm to coastal flora and fauna. In addition, simply sending unskilled cleanup teams into an oiled area or usage of heavy machinery on swampy sites (e.g. mangrove) can trample sensitive organisms and mix oil more deeply into the soil, consequently worsening efforts to remove oily residue. This is the reason as to why the experts who respond to oil spills consider all of these potential problems when evaluating the tradeoffs of how far to go in removing spilled oil.

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Local fishermen rescuing his boat that was badly oiled boat

#### **Rehabilitation and Restoration**

The natural adaptations of populations of animals and plants to cope with environmental stress, combined with their breeding strategies, provide important mechanisms for coping with the daily and seasonal fluctuations in their habitats and for recovering from predation and other stochastic events. Removal of bulk oil contamination through a clean-up operation is the first stage in the recovery and restoration of a damaged environment. Dependent on the scale and nature of the spill, some habitats are able undertake natural recovery while in cases where habitat recovery would be relatively slow, the clean up operation needs to be followed by restoration measures.

While it may be possible to help restore damaged vegetation and physical structures, developing an effective restoration strategy for aquatic life is a greater challenge. In reality, the complexity of the marine environment means that there are limits to the extent to which ecological damage can be repaired through human intervention.

#### Damage Assessment

In addition to the direct biological, ecological and environmental impacts, there are less direct but equally pressing economic and social disruptions that take place post-oil spill. Contamination of coastal amenity areas is a common feature

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Local villagers, even women joined in the clean-up efforts when oil slicks hit the beach in Pengerang, Johor.

of many oil spills, leading to interference with recreational activities such as bathing, boating, angling and diving. Hotel and restaurant owners and others who gain their livelihood from the tourist trade can also suffer temporary losses and return to 'business as usual' requires restoration of public confidence.

Besides, industries namely power plants or desalination plants that rely on seawater for their operation can also be adversely affected by oil spills if their water intake points are affected by oil slicks. On the part of fisheries and mariculture, oil spills can damage the boats and gears, apart from economic loss suffered by fisherman as they are not able resume fishing in the affected area for an extended period of time.

While the short-term effects of oil spills on many marine aquatic life and ecosystems are better recognised and predictable, concerns are raised about possible long-term effects to determine the full extent of the damage and progress of the recovery. Broad spectrum research and detailed post-spill studies should be carried out with scientific rigour, objectivity and balance, with the aim of providing reliable and useful information towards assessing pollution damage, reasonable reinstatement measures and habitat recovery.

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## Profit with Honour: A Plea to All Businesses

On April 22, 1970, almost 20 million American demonstrators took part in the first ever World Earth Day activities with the goal of a healthy, sustainable environment. This tradition continues to its present day hence this year, we celebrate the 40<sup>th</sup> anniversary of World Earth Day.

Forty years since the day protests were held against the degradation of the environment, we are still living beyond our biosphere means (Moffatt, 2000). As such, we are now even more pressed to find ways of living and growing in harmony with nature, and with the earth's finite resources. This is one of Malaysia's main goals reflected in the fourth pillar of the National Green Technology Policy which highlights "sustainable development and conserving the environment for future generations". From research, there appears to be a broad variety of definitions for sustainable development but a definition from the World Commission on Environment and Development in Our Common Future, page 43 states:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

#### Sustainable Business Development

It is hoped that this policy is not merely lipservice that will be left to gather dust on the shelves while commercial organisations bank in on the policy and sell themselves to be more socially-responsible than they actually are. Many businesses are already touting "eco" labels onto their company names, services and products but one sometimes wonder how much they know about ecology preservation and what their level of understanding is on sustainable development. In fact, it might even be safe to say that sustainable development is still on the whole, unknown to most businesses in Malaysia. Amongst those who know about it, some may not accept it readily while others do not understand how their businesses can play a role in sustainable development. To this end, the Business Council for Sustainable Development in Malaysia (BCSDM) was initiated to create awareness in sustainable development and to get the business community involved in sustainable development.



Why the focus on businesses? First of all, businesses are the most influential force on Earth that got us into this environmental mess in the first place and they will be the only force that will help get us out. Most environmental problems still exist today because businesses have not made solving them their priority. Secondly, those of us not considered a business are only individuals and the most committed of us will surely feel a certain degree of helplessness when we think about the scale of the looming environmental calamity. Yes, of course there are things each of us can and should do each day that will make a difference to our planet, our future. However, who amongst us as single individuals will have the energy, encouragement or commitment to do these small things, more so when we see and hear of the terrible consequences caused by irresponsible business ventures? Why should we make time-consuming effort to sort out our rubbish into different recyclable bins every day when giant manufacturers are dumping toxic waste into our waters?

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Why should we have to feel guilty about not using energy-saving light bulbs while large industrial and commercial enterprises are burning up the planet with their high-wattage luminous fluorescents? So, although the difference each individual makes to save planet Earth can be significant, the strength of commercial strategies would be far more formidable.

#### Creating Ecologically Sound Businesses

How then can businesses fix the planet's problems while making money? What can a CEO do to create an ecologically-sound business? Some examples of what businesses in the world have done are presented here in the hope of inspiring and encouraging our local-based businesses to do the same.

For a start, Adobe Systems, a software company, turned itself into one of the greenest corporate companies in America. All it did was as simple as establishing energysaving measures at its headquarters in



Adobe Systems Incorporated - Corporate Headquarters

California. The company invested in motionsensing light switches, waterless urinals and automatic faucets amongst other things. Given that the headquarters spans over a million square feet, Adobe slashed indoor water usage by 22%, landscaping water use by 76%, electricity consumption by 35% and gas use by over 40%. These savings from reduced consumption override their initial investment and until today, continue to add millions to their revenue.

Another American company based in Utah gathers leftover food from restaurants and grocery stores and converts it into a 100% organic soil conditioner to be sold to local nurseries. Eco Straps now produces an estimated 60,000 pounds of compost each month which local garden retailers and wholesalers very promptly snap up. This venture is not only helping to reduce landfill waste by up to 22% but is also generating good revenue for the young University student who launched the business. In fact, the young company is already looking at expanding to five additional markets in California, Arizona, Colorado and Oregon by early 2011.



100% organic soil from leftover food

In another part of the world, Askash Ganga was born. Askash Ganga is a sustainable system that directs rooftop rainwater from each house in an Indian village through gutters, and then channels it to a system of multi-tier, underground tanks. This system is supplying fresh water to about 10,000 people and the Government of Rajasthan has signed a letter of intent to implement the multi-award winning system in 50 villages to serve another 125,000 people.

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Organic cola from Phoenix Organics

A passion for organics is behind the success of Australasia's biggest organic juice maker. Based in New Zealand, Phoenix Organics was started by a husband and wife team committed to sustainability issues and eco principles from day one. They not only produce certified organic beverages but it must be highlighted here that the founders did not merely stick "eco-friendly" labels for the sake of impressing their customers and making money. Their 12 million drink bottles are made from recyclable glass bottles from a purpose-built manufacturing company. They actually believe in sustainability issues so strongly that they planted native trees around their factory to offset carbon emissions from their vehicles. They then traded in their vehicle fleet for more fuel-efficient vehicles. They even switched all their labels so that they are made from renewable wood pulp that adhere to efficient international composting standards. This business built from the home kitchen subsequently became attractive enough for a

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public-listed juice maker, Charlie's Group, to purchase it for A\$10 million.

In the interest of brevity, only four businesses have been highlighted. However, there are many others out there which have proven that it is possible to make tonnes of money and still save the world and that turning green ideas into greenbacks is neither too ambitious nor far-fetched. Businesses really need to run their companies in the best interests of the human population and the natural environment. We have all got a limited time to do something useful for this Earth and businesses are so much more powerful than they think they are in this matter of sustainability. Businesses would surely understand that they do not have the principles and politics that limit governments. As such, businesses can work as quickly as they want to and get rules changed as fast as they desire.

In sum, action is indeed needed to promote green building and responsible environmental practices. To do this, a global partnership is pertinent between the civil society, the government and businesses. The key message here though, is for businesses as the most powerful force on Earth, to take up the challenge to increase eco-efficiency while making their money. After all, there is lots of money to be made but only one planet and one future.

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# Discerning the Equilibrium Between Development and Sustainability

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In the wake of globalisation and economic restructuring, many nations and communities are struggling to redefine and rebuild their economies without impacting the equilibrium of sustainability. The topic of environmental sustainability has well and truly hit the headlines following the fraught Copenhagen Summit late last year.

The theme of World Environment Day (WED) 2010 certainly echoes the urgent call to conserve the diversity of life on our planet. Indeed humans are among only a handful of species whose populations are growing, while most animals and plants are becoming rarer and fewer. As outlined by UNEP (2010a) our present approach to development has caused the clearing of much of the original forest, drained half of the world's wetlands, depleted three-quarters of all fish stocks, and emitted enough heat trapping gases to keep our planet warm for centuries to come.

Asia and the Pacific encompass some of the world's greatest biological, cultural and economic diversity. It covers 8.6% of the Earth's total surface area and nearly 30% of its land area (UNEP, 2010b). The region's wealth in biological diversity and associated traditional knowledge is evidenced by the fact that 5 of the 17 members of the group known as the Like-minded Megadiverse Countries are from this region: China, India, Indonesia, Malaysia and the Philippines.

As we celebrate WED 2010, it is interesting to see how a small indigenous community in the

interiors of Sarawak, in Bario, have balanced the task of preserving all life on earth and at the same time are enjoying the fruits of development in a controlled, sustainable manner. Bario is located in the centre of the Kelabit Highlands in the north-east of Sarawak, Malaysia, adjacent to the international borders of Kalimantan, Indonesia. The highland stands at 3,280 feet above sea level. Bario is the main settlement in the Kelabit Highlands.

There are regular flights between Bario Airport and Ba'kelalan, Marudi and Miri. Bario is also reachable via river (2 days), logging road (15 hours) and trekking (a few weeks).

The Kelabits, of approximately 5,000 people, is one of the smallest ethnic groups in Sarawak. Like many other indigenous communities in Sarawak, the Kelabits live in longhouses in the highlands. However, due to economic and social factors, many have migrated to live in urban areas over the last 20 years. It is estimated that roughly only 1,200 Kelabits are still living in the highlands. The Kelabit language is widely spoken, and many have also learned to speak English and Malay. Currently, there are 12 villages (long houses) housing the predominantly Christian community and 13 homestays in Bario.

Bario lacks basic utilities. Besides the limited network coverage, water supply is through a gravity-fed system and thus they rely on rainwater and river water for their continuous supply. Limited electricity supply is provided through diesel generators and solar-panels.



Although, the majority of the Kelabits and the Penans in Bario can be classified as "hardcore poor" as defined by the Malaysian government, the need for money is relative. What is more important is to improve the basic necessities and infrastructure, i.e. proper roads, continuous electricity supply, clean water supply, proper sewage and waste management and telecommunication connection.

In the past, Bario has attracted many researchers from Universiti Malaysia Sarawak



Facilities at the school (SK Bario)

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with the e-Bario project (ebario, 2009; ITU, 2007; UNIMAS, 2009). The idea of bringing the Internet to Bario was conceived as a research project to determine opportunities for social development through the deployment of information and communication technologies within remote communities in Sarawak. The project was funded by the International Development Research Council (IDRC) of the Canadian government and MIMOS Berhad under the Demonstrator Application Grant Scheme (DAGS) (ITU, 2007).

The e-Bario project was designed to bridge the gap between the shy and unexposed community in the village of Bario and their aggressive, wellinformed counterparts in Malaysia's larger cities (ebario, 200). The project is to serve as the benchmark for future rural development initiatives in Malaysia and elsewhere in the developing world.

On a similar approach, Taylor's University College, a leading private institution of higher learning in Subang Jaya, Selangor, is currently undertaking a megaproject of building a hostel for the primary school at Bario and at the same time adopting the school and the community for continuous engagement of their students and staff with the local community. Various community based development projects have also been outlined to further alleviate poverty among the indigenous community without upsetting the current socio-cultural equilibrium.

Community based development strengthens the ability of rural communities to manage their resources while ensuring the local community's participation. Community based development can help the local community in generating income, diversifying the local economy, preserving culture, conserving the environment and providing educational opportunities.

Three main areas to look into for community based development that is sustainable and responsible at Bario include:

**Economic Aspect:** Bario has tremendous potential to develop and sustain homestay projects to give tourists true experience. The current management of homestay can be improved further with proper guidance and structure.

**Socio-Cultural Aspect:** The rich culture of the Kelabits can be preserved by documenting them and making it available to all visitors. The younger generation will be involved in all the social events. Thus, the older generation can pass their knowhow to these younger Kelabits who will then be proud to show it to the tourists. Hence, this will ensure the continuity of their culture.



The hostel at SK Bario

Environmental Aspect: The current remote and rural setting in Bario is great but the environment is not 100% visitor friendly. Due to the lack of a continuous supply of electricity, water and telecommunication facilities, the location may not attract many holiday seekers. Only the 'hardcore"'ecotourist will enjoy the destination. Thus, the community needs to sort out clean water supply, adequate toilet facilities, efficient solid waste disposal and extensive usage of solar panels (and wind mills). Getting the road tarred/ cemented for easy transportation (i.e. rental of bicycle, motorbike, jeep, etc,) and walking/ trekking, will further make Bario an attractive destination for the 'hardcore' and 'not so hardcore' ecotourist.

All community based development in Bario can be segmented into two phases similar to the Asia-Pacific Economic Cooperation (APEC) homestay approach (APEC, 2009):

#### Phase 1 – Developing community based development

- Assess community needs and readiness for development
- Educate and prepare the community for development
- Identify and establish leadership/local champion
- Prepare and develop community organisation

## Phase 2: Sustaining community based development

- Develop partnerships
- Adopt an integrated approach
- Plan and design quality mini projects that will benefit the community

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- Identify market and develop marketing strategies that will get others to assist
- Implement and monitor performance

In conclusion, it must be understood that sustainability is not like a project that can be completed at a certain point in time. Rather, it is an ongoing balancing act and at the heart of the issue are assumptions about the requirements of future generations and how we expect these requirements to be satisfied.

The vast scale of human activities for development poses a direct challenge to the resilience of the community's ecosystem. The serious effects of these activities are already evident today in many parts of the world including Malaysia. Rapid economic development in many local communities has led to massive changes in lifestyle and increases in correlated indirect drivers of biodiversity and cultural loss. As a result, nature has come under great pressure and much valuable biodiversity has been lost or continues to be degraded. The Bario experience has shown that balanced development is achievable if the basic necessities of acceptable living are met.



Class in Session

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# **Event Highlights** Department of Environment, Malaysia

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#### May 2010

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#### The 24th Meeting of the Malaysia-Singapore Joint Committee on the Environment (MSJCE) and 23rd Annual Exchange of Visits (AEV)

The 24th Meeting of the Malaysia-Singapore Joint Committee on the Environment (MSJCE) and the 23<sup>rd</sup> Annual Exchange of Visits (AEV) was held at Nikko Hotel, Kuala Lumpur on 7 May 2010. The MSJCE meeting was co-chaired by Y. Bhg. Dato' Zoal Azha bin Yusof, Secretary General of the Ministry of Natural Resources and Environment, Malaysia and Mr. Tan Yong Soon, Permanent Secretary of the Ministry of the Environment and Water Resources, Singapore.

The Malaysian delegates to this meeting were senior officers from the Ministry of Natural Resources and Environment and representatives from the Department of Environment, the Ministry of Foreign Affairs, the Attorney General's Chamber, Marine Department, Universiti Kebangsaan Malaysia, the National Hydrography Centre and the Johor Port Authority.

The aim of this meeting was to exchange views, experiences and update each party on tackling environmental issues of mutual interest such as the control of vehicular emissions, water quality in the Straits of Johor, pollution in the Skudai Water Catchment Area, Emergency Response Plan for Chemical Spills at the Malaysia-Singapore Second Crossing, training programmes and transboundary haze pollution.

Meanwhile, the 23rd Annual Exchange of Visits between YB Dato Sri Douglas Uggah Embas, Minister of Natural Resources and Environment, Malaysia and Hon. Dr. Yaacob Ibrahim, Minister of the Environment and Water Resources, Singapore was held to review the work progress carried out by the MSJCE.

![](_page_15_Picture_7.jpeg)

![](_page_15_Picture_8.jpeg)

#### June 2010 "Meet the Client's Day" in **Conjunction with World Environment Day 2010**

On 24 June 2010, the Department of Environment organised the 'Meet the Client's Day' at Dewan Baiduri, Putrajaya. This event was held in conjunction with World Environment Day (WED) 2010. This year's WED theme is, "Many Species. One Planet. One Future" and it was chosen to coincide with the 2010 International Year of Biodiversity. About 110 school children and 100 guests from various sectors participated in this event.

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Several interesting activities were organised to commemorate WED. These were:

- Colouring and drawing contest based on the theme of WED for primary school children
- Environmental talk on global warming for secondary school children
- Environmental interactive guizzes for school children
- Environmental friendly product demonstrations
- Screening of environmental-themed documentary
- Exhibition on the Environment

Meanwhile, DOE also opened desk counters to allow the general public access environmental materials and information.

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Views and opinions expressed by the contributors do not necessarily reflect the official stand of DOE.

![](_page_15_Picture_27.jpeg)

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