Quarterly DOE Update on Environment, Development & Sustainability

IMPAK

Issue 1 / 2010

http://www.doe.gov.my

Post Copenhagen

COP 15: The Copenhagen Accord

A positive step but not ambitious enough...

In the lead up to the United Nations (UN) climate summit in Copenhagen in December 2009, it was repeatedly said that this was "the last chance to save the climate." This was based on the assumption of business-as-usual. If emissions continued to grow on current trends, then, with little time left to put on the brakes and de-carbonise a growing global economy at a sufficient rate, the task would be totally unfeasible.

About 45,000 participants traveled to the summit in Copenhagen last December - the vast majority convinced of the need for a new global agreement on climate change. Representatives from about 200 nations gathered for two weeks with the goal of hammering out a meaningful, fair, binding international environmental accord.

Such an accord might have included two tracks: one track extending and strengthening the legal requirements applicable to the Kyoto parties, the other track binding both Kyoto hold-outs like the United States and rapidly industrialising countries like China and India to appropriate reductions. What was needed was firm emission reduction targets and firm achievement dates on both tracks, including ambitious short-term targets. Also needed were firm funding commitments and financing mechanisms to assist the least developed but hardest-hit countries to adapt to the severe environmental changes they have already experienced and are certain to face in the decades to come. [1]

Opening ceremony of the United Nations Climate Change Conference 2009 on 7 December 2009 in Copenhagen

However, despite intense discussions and late-night negotiations, just two days before the close of the meeting it appeared as though the summit was deadlocked in chaos and headed for failure.

World leaders knew that they were taking a massive risk with the climate. While they were aware of what they needed to do to reduce the risk to a scientifically acceptable level, they could not or would not quite do so because they were hemmed in by economic and political aspirations.

The end of the meeting saw leaders of the US and the BASIC group of countries (Brazil, South Africa, India and China) hammering out a last-minute deal, which on the final day of the summit, produced, what came to be called, the 'Copenhagen Accord'.

The logical conclusion is that this is the arrangement that the big players (meaning the US and the BASIC group) now prefer – an informal setting, where each country says what it is prepared to do – where nothing is negotiated and nothing is legally binding. Many felt deflated and disappointed with the overall outcome.

A US government official described the agreement as a "historic step forward" but conceded it was not enough to prevent dangerous climate change in the future. The US President Barack Obama said the deal would be a foundation for global action but there was "much further to go". He said the US, China, Brazil, India and South Africa had "agreed to set a mitigation target to limit global warming to no more than 2°C and importantly, to take action to meet this objective" and added "we are confident that we are moving in the direction of a significant accord."[2]

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From the desk of the Director General

Post Copenhagen

Last year from 7- 18 December, representatives from over 200 countries attempted to forge a legally binding international environmental agreement at the United Nations Climate Change Conference in Copenhagen, Denmark. Some 45,000 others participated directly or indirectly at the sidelines. For two weeks, the Danish capital held centre stage in the affairs of human kind. The world's attention on the conference proceedings was unwavering. The feeling that we were all at the crossroads was palpable. But it became increasingly clear as the days went on that the leaders of the world were yet again hemmed in by narrow economic and political aspirations. They were not sufficiently inspired by the environmental challenges facing Mother Earth. Just two days before the close of the conference, all seemed lost. The Summit was deadlocked in chaos and heading for failure. Then on the final day a dramatic last-gasp deal was hammered out - the Copenhagen Accord.

The Accord contained no reference to a legally binding agreement. Nor was there a deadline for transforming it into a binding deal in the future. It does not set firm emission reduction targets or achievement dates. Also absent were firm funding commitments and financing mechanisms to assist the less developed and hardest-hit countries. In short, the Accord is non-binding and non-formal. Though many were disappointed, it must be regarded as an important step forward. Better a pledge than none at all.

Malaysia too made a conditional pledge to reduce carbon emissions by 40% within the next 10 years (in terms of emission intensity as a percentage of GDP). For the year 2006, Malaysia's carbon emission per individual stood at 187 million tonnes. However, domestic environmental awareness and industrial demands do not indicate optimism in achieving this pledge of a 40% reduction. Compliance to environmental sustainability at the national level remains voluntary for major sectors of our industry encompassing transportation, oil and gas, manufacturing, power industry, oil palm and timber logging. The law as it stands does not make compliance to sustainability, mandatory. It must also be noted that the establishment of the six National Key Result Areas (NKRAs) announced in July 2009 does not relate in any way to a cut in carbon emission or to environmental sustainability within the NKRAs matrix. Further, the recently drafted Green Technology Policy (GTP) and the accompanying Renewable Energy Policy and Action Plan roadmap also do not link up with any of the components of the NKRAs. However, the Green Technology Policy, standing on its own, has objectives that promote a reduction in carbon emissions by working at the individual and societal level. In the budget speech for 2010, the Prime Minister of Malaysia announced the establishment of a Green Technology Financing Scheme amounting to RM1.5 billion in an attempt to improve the supply and utilisation of green technology. Properly administered, the scheme can benefit the workforce of companies who are producers and users of green technology. It is hoped that the workforce will also be readied for the transformational change required to deal with climate change.

Based on these developments at the international and national levels, the message is clear. Once again, it is the individual will that must emerge and arouse the political will to muster the whole nation into action. The individual must be at the forefront of the move to save the world from environmental disaster. Our lifestyles must change. Green consumerism has to emerge as a powerful force. In other words, the environmental bandwagon must have a membership of some 6 billion-odd people, equal to the population of the world. We can together mitigate the environmental abuses of the past.

At another level, as more and more workers of the world become green-collared and are part of a green economy, a surge may yet develop forcing positive environmental change through the ballot box. Hence, it may be more prudent for governments to prepare their youth for the emerging global green economy. This can be achieved by re-designing training and education curricula, providing financial and fiscal incentives to pursue green technology courses at the tertiary level and by formulating a system of grading and certification of personnel who are competent in providing green technology services and skills. Green marketing initiatives by themselves will not 'green' a national economy. 'Green washing' will not work and it is detrimental to products, industries and countries.

And lastly we must also be mindful of the fact that the emerging environmental crisis in many poor parts of the world is disproportionally affecting women. Women's vulnerability to climate change is rooted in social, economic and cultural factors. But despite their vulnerability to climate change, women show every potential of being effective agents for promoting adaptation and mitigation steps against the effects of climate change particularly in the developing countries. Efforts should therefore be made at both the national and international levels to incorporate a gender perspective in environmental plans, policies, programmes and strategies. Women's priorities and needs must be reflected in development planning and funding. Women should be made part of the decision making process. Funding organisations and donors should also take into account women-specific circumstances when developing and introducing technologies related to climate change adaptation. Women, not surprisingly, can indeed be a powerful force in saving Mother Earth!

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President Obama characterised it as a "meaningful deal"

European Union (EU) representatives expressed disappointment with the 11th hour accord, saying that it fell short of member nations' expectations. While some analysts welcomed the fact that a deal had been struck, many felt that its achievements were modest; more than a few environmentalists believe that the conference was a failure.

But for all of its shortcomings, the Accord is an important step forward. It brings the world's largest greenhouse-gas emitters together in accord with the emerging economies which will produce 90% of the new emissions by 2050. It lists the actions of each major player for all to see. [3]

For the US President, this is important to help his administration push through the climate bill in Congress this year.

Key Points of the Accord [4]

Legal Status

Crafted principally by the US and the BASIC group, the Accord was presented as a take-it-or-leave-it *fait accompli* to representatives of almost 200 other nations in attendance, few of whom had been consulted. The Accord contained no reference to a legally binding agreement, as some developing countries and climate activists had hoped for.

Neither was there a deadline for transforming it into a binding deal, though UN Secretary General Ban Ki-moon said it needed to be turned into a legally binding treaty next year. The Accord was merely 'recognised' by the nations at the Copenhagen summit, rather than approved, which would have required unanimous support. It is not clear whether it is a formal UN deal.

Temperature Rise

The text recognised the need to limit global temperatures from rising no more than 2˚C (3.6˚F) above pre-industrial levels. The language in the text showed that 2˚C was not a formal target; just that the group "recognised the scientific view that" the temperature increase should be held below this figure. However, the Accord did not identify a year by which carbon emissions should peak, a position resisted by some richer developing nations.

Countries were asked to spell out by 31st January 2010 their pledges for curbing carbon emissions by 2020. The deal did not spell out penalties for any country that failed to meet its promise.

Financial Aid

The deal promised to deliver USD30 billion (£18.5 billion) of aid for developing nations over the next three years. It outlined a goal of providing USD100 billion a year by 2020 to poor nations that risk bearing the brunt of the global warming fallout, but failed to provide a fixed payout plan for the money.

The Accord said the rich countries will jointly mobilise the USD100 billion, drawing on a variety of sources, "public and private, bilateral and multilateral, including alternative sources of finance." A green climate fund will also be established under the deal. It will support projects in developing countries related to mitigation, adaptation, 'capacity building' and technology transfer.

Emissions Transparency

The pledges of rich countries will come under "rigorous, robust and transparent" scrutiny under the UN Framework Convention on Climate Change (UNFCCC). In the Accord, developing countries will submit national reports on their emission pledges under a method "that will ensure that national sovereignty is respected." Pledges on climate mitigation measures seeking international support will be recorded in a registry.

Review of Progress

The implementation of the Copenhagen Accord will be reviewed by 2015. This will take place about a year-and-a-half after the next scientific assessment of the global climate by the Intergovernmental Panel on Climate Change (IPCC).

However, if, in 2015, delegates wanted to adopt a new, lower target on global average temperature, such as 1.5˚C rather than 2˚C, it would be recognised as been too late.

So after the near-train wreck of last December's Copenhagen climate summit, what lies ahead for efforts to beat back global warming? A three-page, no-binding agreement that was not fully accepted by all the nations in attendance may be diplomatically flimsy but it does hold real promise. Negotiators have agreed that the next step will be to put flesh on this skeletal agreement. Major developed and developing countries agreed that by 31st January 2010 they would submit their emissions-reduction plans — plans that will be crucial in pushing the world down a low-carbon path.

Activists expressing their anger over the Copenhagen Accord

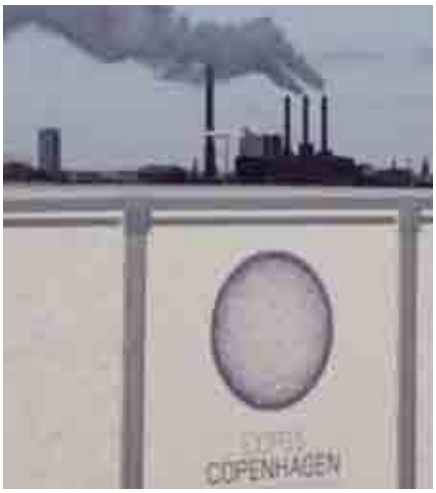
Climate Goals after Copenhagen

As of 31st January 2010, 55 countries accounting for almost 80% of world greenhouse gas emissions have mostly reiterated existing goals for curbing emissions under the deadline set in December's Copenhagen Accord.*

So what happens now?

The Copenhagen climate conference is now history. The aftermath of Copenhagen assumes a future that is merely a projection of the past. The Accord is neither earth shattering nor a failure. It avoided an international political mess that appeared inevitable as late as the closing hours of the conference. It falls short of expectations mainly because expectations had been ratcheted up far beyond what was realistic. Nevertheless, it is a meaningful step forward, but its ultimate value remains to be determined. The first review of the implementation of commitments under the Accord is scheduled to be finished by 2015, one year after completion of the fifth assessment of the IPCC. It was the IPCC's alarming fourth assessment in 2007 that mobilised the world and set the stage for Copenhagen. The fifth assessment will be just as important. [5]

* The 31 January 2010 deadline is flexible and country plans may be submitted later.



References :

1. *http://current.com/items/91793177_what-happened-in-copenhagen.htm*
2. *http://news.bbc.co.uk/2/hi/in_depth/8421880.stm*
3. *http://news.bbc.co.uk/2/hi/science/nature/8423822.stm*
4. *http://news.bbc.co.uk/2/hi/science/nature/8422307.stm*
5. *http://www.nature.com/nature/journal/v462/n7276/full/462957b.html*

Source
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CARBON EMISSION CUT PLEDGE

Paradigm shift in compliance to environmental sustainability?

The call for countries to reduce carbon emission is not a new idea. It has been around since the discovery of the depletion of the ozone layer and increasing awareness of global climate change as a direct impact of the greenhouse gases effect.

Dilemma of an International Obligation

Various international conventions/agreements on the reduction of the greenhouse gases will remain forever on glossy papers if countries around the world are not serious about committing themselves to real implementation of carbon emission pledges within their national boundaries.

A paradigm shift is needed in forging a new instrument of international cooperation within the wider framework of Free Trade Agreements and joint conviction shared by stakeholders such as the International Organisation for Economic Cooperation and Development (OECD), major banking bodies, that is, International Monetary Fund (IMF), World Bank, Asian Development Bank (ADB) and leading industrial/corporate entities.

COP-15[1] was thought to fulfil that fundamental gap and weaknesses inherent in the Kyoto Protocol. However, events during and after Copenhagen point to a totally new direction that is not getting any better.

The Failed COP-15 : A Conflict of Interest Between Developed and Developing Blocs

Malaysia, as a developing nation, has no binding commitments under the now defunct Kyoto Protocol. Although the Clean Development Mechanism (CDM) under the Kyoto Protocol provides Malaysia a venue to trade certified emission reductions in the international carbon market, to-date there is no real understanding of how this can be achieved because there is no substantive development in the Malaysian carbon trading market which is a nascent phenomenon.

Developed blocs such as the European Union, China and Japan on the other hand are unwilling to make specific binding commitments[2] unless major players such as the United States come firmly on board.

Malaysia's Carbon Emission Cut Initiative

Malaysia's initiative at the recently concluded COP-15 to cut its carbon emissions by 40% within the next 10 years, that is, by the year 2020 compared to the 2005 levels, is a fairly ambitious plan. YAB Prime Minister made this pledge at Copenhagen where he stated: "I would like to announce here in Copenhagen that Malaysia is adopting an indicator of a voluntary reduction of up to 40% in terms of emissions intensity of GDP (Gross Domestic Product) by the year 2020 compared to 2005 levels…"(*New Straits Times*, 18 December 2009)

However, this pledge is a conditional offer and subject to two main international conditions:

1. Fair distribution of the proposed USD10 billion fast-track funding for developing nations to control their emissions.

2. Equal apportionment of carbon emission cut obligations based on the 'principle of fairness' because developed countries (the United States, European Union, China and Japan) remain the biggest contributors of such carbon emissions.

In essence, such a pledge is achievable only if Malaysia is able to receive the crucial transfer of technology, that is, green-based technologies and adequate international funding, from developed blocs.

Given the United Nation Millennium Development Goal indicators[3] that Malaysia's carbon emissions for the year 2006 alone stood at 187 million tonnes per individual, it is highly doubtful if such a pledge can ever be achieved realistically.

National Emission Plans

Details of national emission plans compiled by Reuters[1] are given below. Each country's percentage of world emissions is given in brackets, based on US Carbon Dioxide Information Analysis Center's data of emissions from fossil fuels and cement production:

AUSTRALIA (1%) reaffirmed its goal of a 5 to 25% emissions cut below 2000 levels, corresponding to 3-23% below 1990 levels. It added that a decision to move beyond a unilateral 5% would not happen until the "level of global ambition becomes sufficiently clear".

BRAZIL (1%) reaffirmed a goal announced before Copenhagen of reducing emissions by 36-39 % below projected levels by 2020. At the most ambitious end of the range, it said emissions would fall by 20% from 2005 levels, back to 1994 levels.

CHINA* (22%) reiterated that it would endeavour to cut the amount of carbon produced per unit of economic output by 40 to 45% below projected growth levels by 2020 from 2005. This "carbon intensity" goal would let emissions keep rising, but more slowly than economic growth.

EUROPEAN UNION (15%) said it was reiterating an offer of a unilateral goal for the 27-nation group of 20% emissions cut by 2020, from 1990 levels, and 30% if other nations deepened their reductions.

INDIA* (6%) said that it would endeavour to reduce its carbon emission intensity by 20 to 25% by 2020 in comparison to the 2005 level.

**Note: Both China and India were noted to have stressed most allegiance to the 1992 UN Climate Convention and did not mention association with the Copenhagen Accord.*

JAPAN (4%) said it was reiterating an offer to cut greenhouse gas emissions by 25% below 1990 levels by 2020 on condition other emitters led by China and the United States agreed an ambitious deal.

SOUTH AFRICA (1%) offered to slow the growth of its emissions by 34% below projected levels by 2020, conditional on a broad global deal and aid.

UNITED STATES (18%) said it would aim to cut emissions by about 17% by 2020, from 2005 levels, confirming a goal set by the White House last year. The target, 4% below 1990 levels, may be harder to achieve after the Democrats lost a Senate seat.

Other emitters:

CANADA set a 17% carbon emission reduction target from 2005 levels over the next 10 years.

COSTA RICA is to become carbon neutral by 2021.

Carbon Emissions of other ASEAN Countries (individual):

1. Indonesia (333 million tonnes)
2. Thailand (273 million tonnes)
3. Vietnam (106 million tonnes)

Domestic Awareness and Industrial Reality

Domestic environmental awareness and industrial demands hardly show an optimism that could be used as a positive indicator towards clinching the 40% pledge - be it within the short and even long term phases.

Compliance to environmental sustainability at the national level remains voluntary if not non-committal, within the major industrial sectors encompassing transportation, oil and gas, manufacturing, power industry, oil palm, timber logging etc. There is no indication whether compliance will be made a mandatory requirement because there is no legal basis for making it so under the current Malaysian environmental regulatory framework. Even within the power industry, a report by Tenaga Nasional Bhd shows that it can only commission its first nuclear reactor by 2025 and this certainly does not help Malaysia meet the 40% carbon emissions cut set for the year 2020.[4]

Implications of National Key Result Areas

The announcement by YAB Prime Minister on 27 July 2009 regarding the establishment of Six National Key Result Areas (NKRAs) is commendable. The six main areas entail matters relating to corruption, better access to affordable and quality education, better rural infrastructure, higher standards of living for the poor, improved public transport and reduction in crime.[5]

However, none of the above NKRAs relate to a cut in carbon emission or are in any way connected to compliance to environmental sustainability within the NKRA matrix. There is also no co-relation between these NKRAs components with respect to the newly drafted Green Technology Policy and the accompanying Renewable Energy Policy and Action Plan Roadmap which did not take into account the component of carbon emission cut pledge.

The National Green Technology Policy covers four primary pillars of Energy, Environment, Economy and Social perspectives. The five main objectives under this policy are:

1. Decreasing growth of energy consumption while enhancing economic development
2. Facilitating growth of the Green Technology industry and enhancing its contribution to the national economy
3. Increasing national capability and capacity for innovation in Green Technology development and enhancing Malaysia's Green Technology competitiveness in the global arena
4. Ensuring sustainable development and conserving the environment for future generations
5. Enhancing public education and awareness of Green Technology and encouraging its widespread use

To-date, there is also no indication at all from the government (and no studies have been undertaken in this specific area according to the writer's understanding) to gauge the effectiveness of local green technologies and the financial burden of developing renewable energy in the context of the carbon emission cut equation within the COP-15 pledge by Malaysia.

For Malaysia to achieve the 40% pledge, there is a serious need to include an environmental sustainability NKRA within the Green Technology Policy and Renewable Energy Policy and Action Plan Roadmap implementation phases. This would call for a consistent harmonisation of all government policies within the environmental sustainability compliance and performance framework.

References

1. http://unfccc.int/2860.php; *http://unfccc.int/files/press/news_room/statements/application/pdf/unfccc_speaking_notes_20100120.pdf*
2. See "UNFCCC receives list of government climate pledges", at *http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/pr_accord_100201.pdf*
3. See " Malaysia's MDG Reports -MDG 7 - Ensure Environmental Sustainability", at *http://www.undp.org.my/uploads/mdg7.pdf*
4. *http://www.thestar.com.my/ news/story.asp?file=/2009/6/22/nation/20090622161327&sec=nation*
5. *http://www.kpwkm.gov.my/uploadpdf/ nkrabi.pdf*

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CUBA wrote to express opposition to the Accord.

ICELAND is to cut carbon emission by 15% below 1990 levels.

INDONESIA agreed to reduce carbon emissions by 26% by 2020 based on business-as-usual levels. With international assistance, it offered an increased reduction of 41% by 2020, based on business-as-usual levels.

KAZAKHSTAN will cut greenhouse gas emissions by 15% below 1992 levels.

MALAYSIA agreed to reduce its carbon dioxide emission to 40% by the year 2020 compared to the 2005 levels, subject to assistance from developed countries. [2]

MALI said it wanted to be associated with the Accord.

NEW ZEALAND joined the Accord, reiterating a conditional target of a cut in emissions of 10 to 20% by 2020 from 1990 levels.

NORWAY reiterated a unilateral promise to cut emissions by 30 % below 1990 levels by 2020, and by 40% if other nations set tougher goals.

MEXICO is to reduce emissions 50% below 2000 levels by 2050.

PHILIPPINES is to reduce emissions 5% below 1990 levels.

RUSSIA pledged to reduce emissions between 20 to 25% below 1990 levels by 2020 if a global agreement is reached committing other countries to comparable emission reductions. This target had not been announced to the UNFCC Secretariat before the COP 15 meeting. In the COP 15 negotiations, Russia only pledged to make a 10 to 15% reduction below 1990 levels by 2020 as part of a commitment to the Kyoto Protocol but said it would reduce emissions by 20 to 25 % as part of a long term cooperative plan.

SINGAPORE restated plans to cut emissions by 7-11% below business-as-usual levels by 2020. It would expand the offer to a 16% cut "when a global agreement on climate change is reached".

SOUTH KOREA reiterated a plan to slow greenhouse gas emissions by 30% below business-as-usual levels by 2020.

UKRAINE will reduce greenhouse gas emissions by 20% below 1990 levels.

Note: *The US Climate Action Network also posted links to the UN Website of letters expressing support from Bangladesh, Cambodia, Central African Republic, Macedonia, Madagascar, The Maldives, Marshall Islands, Namibia, Peru, Samoa, Trinidad and Tobago. Several other countries have since then registered their carbon reduction commitments. These are not recorded in the tables.*

1. *http://thestar.com.my/news/story.asp?file=/2010/2/1*
2. *http://nst.com.my/articles/20091220191101/Article/index_html*

Changing Climates, Changing Health Impacts

Perhaps, first we should concede that climate change is inevitable and has occurred before. Melting glaciers, rising sea levels, floods and volcanoes allow for biological evolution, development of civilisations and formation of continents. The difference is, this time around, the proverbial finger of blame points to us – human-induced climate change is the term being used. And this time around, climate change includes the unprecedented impact on moral, political and socio-economic climates as well.

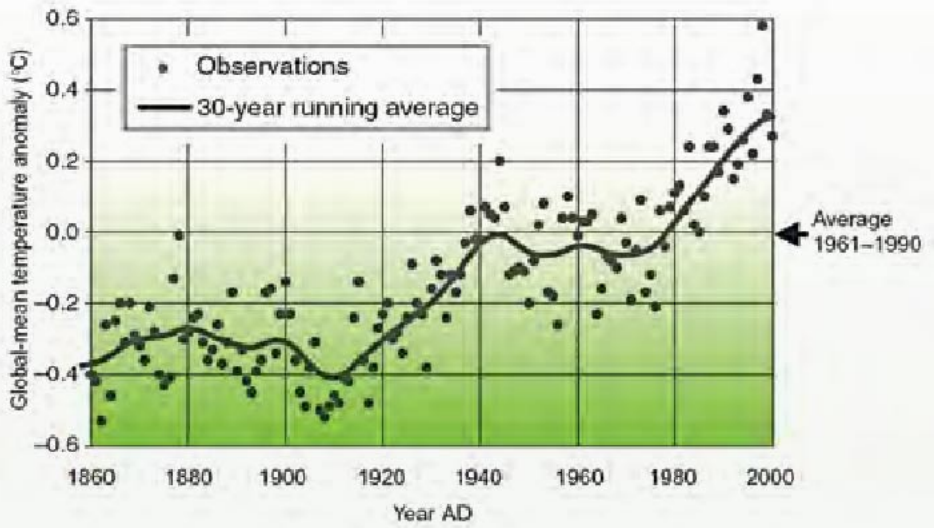

Figure 1: Observed global average land and sea surface temperatures from 1860 to 2000
Source: World Health Organization

The scale of the current climate change wave is also notable. Climatic change has been observed in all continents with vital ecological and human effects. Global average land and sea surface temperature has been on the increase since 1860 (Figure 1). The greenhouse gas methane is at its highest atmospheric concentration in 650,000 years. Sea levels have risen approximately 12-22 cm worldwide in the past century. The incidents of natural disasters such as floods, droughts, typhoons, hurricanes, dust storms, heat waves and cold spells are on an increasing trend. Climate changes can affect human health directly (e.g. impacts of heat stress, deaths or injuries, displacement, physical and psychological trauma caused by natural calamities) and indirectly through changes in the range of disease vectors (e.g. mosquitoes), water-borne pathogens, water quality, air quality, food availability and quality. These changes also affect air quality, safety of drinking water, food supplies and shelter which are all fundamental requirements and intricately linked to human health (Figure 2).

Yet, should these changes be surprising? A holistic view of natural history serves as a lesson that the development of a species, particularly a species that thrives on adapting its environment to serve its needs, comes at a price. As a species, humans experienced a paradigm shift when we began cultivation and agricultural practices. The post-hunter-gatherer individual was no longer at the mercy of nature and its bounty but could now grow crops and keep livestock for a more constant supply of food. An increase in food supply also meant that larger populations were now sustainable. Yet even with this development, there was already a price to pay in terms of health – denser populations meant an increase in infectious diseases and living close to animals increased the incidence of zoonoses. A key event of agrarianism in human civilisation is the development of complex linkages of energy and food cycles to our destiny. There were clear benefits - the 20th century Caucasian man profited from adequate food supplies by becoming larger than his predecessor and having lower mortality rates. Yet today, an estimated 850 million people worldwide remain energy undernourished.

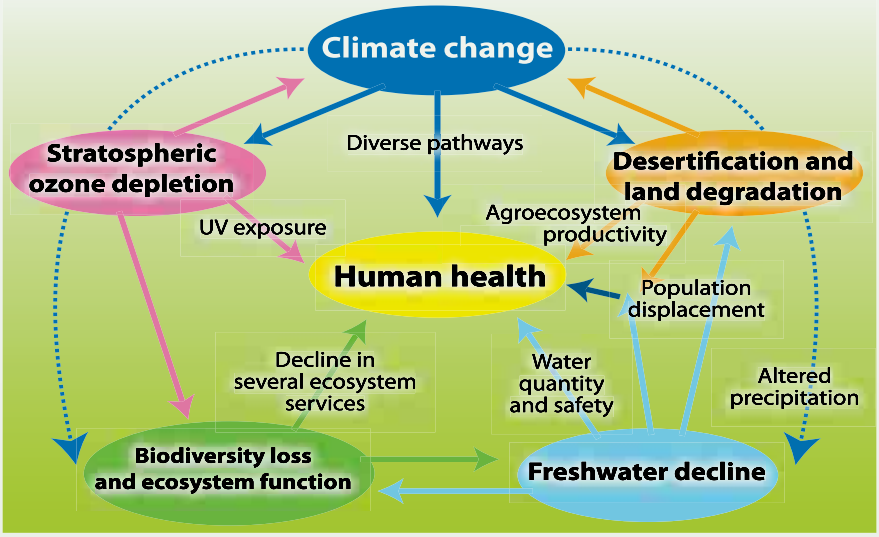

Figure 2: Influence of global environmental change on human health
Source: World Health Organization

We are caught in a grim cycle of food production contributing to climate change and climate change in turn affecting food supplies. Increasing surface temperature, rising sea levels and poor air quality associated with the current climate change will most obviously affect crop yields and food supplies. A food crisis now looms over us. Global yields of wheat, rice and barley have been impaired by climate change and today one in six individuals does not get enough food to lead a healthy life. In today's paradoxical world, both undernutrition and overnutrition co-exist, sometimes even within the same population. Dietary patterns have also changed, with marked increases in consumption of food high in fat and sugar. This unhealthy transition contributes to a rise in obesity and related chronic diseases, particularly Type 2 diabetes, ischaemic heart disease and some cancers. Therefore, some countries struggle with the challenge of being undernourished whilst recording an increase in obesity-linked diseases due to increased availability of food high in saturated fats and sugar. An attempt towards restoring equilibrium in diet and food distribution is part of the solution. For example, in what may become a beneficial cascading effect, reducing high consumption levels of animal products in high income countries will allow for an increase in low income countries, with positive health effects for both categories of countries.

There is evidence that most of the global warming observed during the last 50 years is attributable to human activity with serious implications on public health. Cultivation of crops and livestock requires large areas of deforested land. Today, livestock uses almost a third of the world's entire land surface. Ironically, the seemingly 'green' practice of agriculture is also accountable for one-fifth of all greenhouse gas emissions. This is the same amount of gas emissions from industry and even greater than that from transport. Methane and nitrous oxide are impactful emissions from this sector than is carbon dioxide – methane's contribution to climate change has recently been reassessed as being more than half that of carbon dioxide. A rapid worldwide increase in meat consumption is also compounding this problem - feeding a population on a diet of animal protein requires more farmland than a diet of plant protein. A dual strategy of reducing worldwide consumption of animal products and intensity of emissions from livestock must be devised to avert further climatic changes.

Changes to terrain such as deep ploughing and the removal of virgin topsoil kill natural grasses that normally keep soil in place. During dry seasons, with no natural anchors to keep the soil in place, it dries up and turns to dust creating dust storms – both an ecological and human disaster. Also, more than half of the world's population today lives in urban areas, and this is expected to increase to 60% in 2030. Concrete buildings, tarred roads and low ventilation increases thermal-storage capacity and can add 2-10°F onto ambient temperatures. They prevent absorption of rainfall, which can overwhelm drainage systems and cause floods. The Aedes mosquito has also adapted to urban conditions. Higher standards of living place immense demands on water supplies and other resources. When we change land use from forests to agriculture and subsequently to residential, commercial and industrial use, we alter climatic systems.

Climate change also has acute effects on health. The European summer of 2003 caused 27,000 deaths associated with abnormally high temperatures. The Intergovernmental Panel on Climate Change of the United Nations landmark report in 2007, projected a 90% probability of more frequent and intense heat waves. Heat waves in 2003 killed an estimated 30,000 people in Europe due to heat stroke and cardiovascular, cerebrovascular and respiratory diseases. Most of these deaths occurred in the young and elderly. Increased frequency in rainfall that can lead to floods, landslides and debris flow, bringing with it its own medical challenges. Waterborne disease outbreaks could occur, as seen in Milwaukee when the heaviest rainfall recorded in 50 years lead to a Cryptosporidium outbreak causing 54 fatalities.

We have long known that climatic conditions affect infectious diseases - Roman aristocrats used to retreat to cooler hill resorts each summer to avoid malaria. Changes to our environment expose us to different infectious diseases (Table 1). A rise in food- and vector-borne infectious diseases such as diarrhoea and malaria has already been recorded. In 2000, the World Health Organization attributed 2.4% of worldwide diarrhoea and 6% of malaria cases to climate change. In 2008, 109 countries were endemic for malaria and there were 247 million cases of malaria amongst 3.3 billion people at risk in 2006. Predictions include that in the next couple of decades, tens and hundreds of millions more cases will occur in regions where malaria is already present, and disease vectors are expected to move up in latitude and altitude. These diseases are also characteristic of refugee populations that may develop as people are displaced from their homes due to floods, tsunamis and other natural disasters – malaria epidemic risk increases around five-fold in the year after an El Niño event. Developing countries and localities with weak health infrastructure will be the least able to cope without assistance to prepare and respond. Nonetheless, the rise in malaria cases cannot be completely attributed to the climatic change occurring now. Follow the breadcrumbs and the blame shifts to earlier events - the effects of denser populations, increased movement of people, poor drainage, forest clearance and insecticide resistance.

In 2009, the World Health Assembly endorsed a new WHO workplan on climate change and health. This includes (i) advocacy to raise awareness that climate change is a fundamental threat to human health; (ii) forge partnerships to ensure that health is properly represented in the climate change agenda; (iii) coordinate reviews of scientific evidence on climate change and health; and (iv) strengthen health systems to assist countries to assess their health vulnerabilities and build capacity to reduce it.

Adaptation strategies are also being carefully considered to enhance a population's coping capacity against climate variability, with a focus on economic wealth, technology, information and skills, infrastructure, institutions, and equity. There is also a need to create additional legal frameworks, institutions and an environment that enables people to take well-informed, long-term, sustainable decisions to increase the coping and adaptive capacity of the populations.

Climate change is not accidental; it is a consequence of human progress and development. In the checks and balances of life on earth, there is always a price to pay for seemingly apparent benefits. At the price of our growth and dominance as a species, today we are battling with the repercussions of this development. If the balance has tipped unfavourably, the decision to make substantial changes becomes an easy one to make.

Table 1: Examples of how diverse environmental changes affect the occurrence of various infectious diseases in humans (WHO, Climate Change and Infectious Diseases) (*http://www.who.int/globalchange/en/*).

Environmental changes	Example diseases	Pathway of effect
Dams, canals, irrigation	Schistosomiasis	▲ Snail host habitat, human contact
	Malaria	▲ Breeding sites for mosquitoes
	Helminthiasies	▲ Larval contact due to moist soil
	River blindness	▼ Blackfly breeding, ▼ disease
Agricultural intensification	Malaria	Crop insecticides and ▲ vector resistance
	Venezuelan haemorraghic fever	▲ Rodent abundance, contact
Urbanization, urban crowding	Cholera	▼ Sanitation, hygiene; ▲ water contamination
	Dengue	Water-collecting trash, ▲ *Aedes aegypti* mosquito breeding sites
	Cutaneous leishmaniasis	▲ Proximity, sandfly vectors
Deforestation and new habitation	Malaria	▲ Breeding sites and vectors, immigration of susceptible people
	Oropouche	▲ Contact, breeding of vectors
	Visceral leishmaniasis	▲ Contact with sandfly vectors
Reforestation	Lyme disease	▲ Tick hosts, outdoor exposure
Ocean warming	Red tide	▲ Toxic algal blooms
Elevated precipitation	Rift valley fever	▲ Pools for mosquito breeding
	Hantavirus pulmonary syndrome	▲ Rodent food, habitat, abundance

▲ increase ▼ reduction

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The Copenhagen Accord

In accordance with common but differentiated responsibilities ...

The Heads of State, Heads of Government, Ministers, and other heads of delegation present at the United Nations Climate Change Conference 2009 in Copenhagen,

In pursuit **of the ultimate objective of the Convention as stated in its Article 2,**

Being guided **by the principles and provisions of the Convention,**

Noting **the results of work done by the two *Ad hoc* Working Groups,**

Endorsing **decision x/CP.15 on the *Ad hoc* Working Group on Long-term Cooperative Action and decision x/CMP.5 that requests the *Ad hoc* Working Group on Further Commitments of Annex I Parties under the Kyoto Protocol to continue its work,**

Have agreed **on this Copenhagen Accord which is operational immediately.**

1 We underline that climate change is one of the greatest challenges of our time. We emphasise our strong political will to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities. To achieve the ultimate objective of the Convention to stabilise greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, we shall, recognising the scientific view that the increase in global temperature should be below 2°C, on the basis of equity and in the context of sustainable development, enhance our long-term cooperative action to combat climate change. We recognise the critical impacts of climate change and the potential impacts of response measures on countries particularly vulnerable to its adverse effects and stress the need to establish a comprehensive adaptation programme including international support.

2 We agree that deep cuts in global emissions are required according to science, and as documented by the IPCC Fourth Assessment Report with a view to reduce global emissions so as to hold the increase in global temperature below 2°C, and take action to meet this objective consistent with science and on the basis of equity. We should cooperate in achieving the peaking of global and national emissions as soon as possible, recognising that the time frame for peaking will be longer in developing countries and bearing in mind that social and economic development and poverty eradication are the first and over-riding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development.

3 Adaptation to the adverse effects of climate change and the potential impacts of response measures is a challenge. Enhanced action and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa. We agree that developed countries shall provide adequate, predictable and sustainable financial resources, technology and capacity-building to support the implementation of adaptation action in developing countries.

4 Annex I Parties commit to implement individually or jointly the quantified economy-wide emissions targets for 2020, to be submitted in the format given in Appendix I by Annex I Parties to the secretariat by 31 January 2010 for compilation in an INF document (documents that provide information but are not binding). Annex I Parties that are Party to the Kyoto Protocol will thereby further strengthen the emission reductions initiated by the Kyoto Protocol. Delivery of reductions and financing by developed countries will be measured, reported and verified in accordance with existing and any further guidelines adopted by the Conference of the Parties, and will ensure that accounting of such targets and finance is rigorous, robust and transparent.

5 Non-Annex I Parties to the Convention will implement mitigation actions, including those to be submitted to the secretariat by non-Annex I Parties in the format given in Appendix II by 31 January 2010, for compilation in an INF document, consistent with Article 4.1 and Article 4.7 and in the context of sustainable development. Least developed countries and

small island developing States may undertake actions voluntarily and on the basis of support. Mitigation actions subsequently taken and envisaged by Non-Annex I Parties, including national inventory reports, shall be communicated through national communications consistent with Article 12.1(b) every two years on the basis of guidelines to be adopted by the Conference of the Parties. Those mitigation actions in national communications or otherwise communicated to the Secretariat will be added to the list in Appendix II. Mitigation actions taken by Non-Annex I Parties will be subject to their domestic measurement, reporting and verification, the results of which will be reported through their national communications every two years. Non-Annex I Parties will communicate information on the implementation of their actions through national communications, with provisions for international consultations and analysis under clearly defined guidelines that will ensure that national sovereignty is respected. Nationally appropriate mitigation actions seeking international support will be recorded in a registry along with relevant technology, finance and capacity building support. Those actions supported will be added to the list in Appendix II. These supported nationally appropriate mitigation actions will be subject to international measurement, reporting and verification in accordance with guidelines adopted by the Conference of the Parties.

6 We recognise the crucial role of reducing emission from deforestation and forest degradation (REDD) and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD-plus, to enable the mobilisation of financial resources from developed countries.

7 We decide to pursue various approaches, including opportunities to use markets, to enhance the cost-effectiveness of, and to promote mitigation actions. Developing countries, especially those with low emitting economies should be provided incentives to continue to develop on a low emission pathway.

8 Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries, in accordance with the relevant provisions of the Convention, to enable and support enhanced action on mitigation, including substantial finance to REDD-plus, adaptation, technology development and transfer and capacity-building, for enhanced implementation of the Convention. The collective commitment by developed countries is to provide new and additional resources, including forestry assistance and investments through international institutions, approaching USD30 billion for the period 2010- 2012 with balanced allocation between adaptation and mitigation. Funding for adaptation will be prioritised for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa. In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilising jointly USD100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. New multilateral funding for adaptation will be delivered through effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries. A significant portion of such funding should flow through the Copenhagen Green Climate Fund.

9 To this end, a High Level Panel will be established under the guidance of and accountable to the Conference of the Parties to study the contribution of the potential sources of revenue, including alternative sources of finance, towards meeting this goal.

10 We decide that the Copenhagen Green Climate Fund shall be established as an operating entity of the financial mechanism of the Convention to support projects, programmes, policies and other activities in developing countries related to mitigation including REDD-plus, adaptation, capacity building, technology development and transfer.

11 In order to enhance action on development and transfer of technology, we decide to establish a Technology Mechanism to accelerate technology development and transfer in support of action on adaptation and mitigation that will be guided by a country-driven approach and be based on national circumstances and priorities.

12 We call for an assessment of the implementation of this Accord to be completed by 2015, including in light of the Convention's ultimate objective. This would include consideration of strengthening the long-term goal referencing various matters presented by the science, including in relation to temperature rises of 1.5˚C.

Source
Compiled from UN webpage

Coastal and Marine Ecosystems-based Adaptations to Mitigate Climate Change

Perhaps the most important meeting of this decade, the 15th session of the Conference of Parties (COP15) to the United Nations Framework Convention on Climate Change (UNFCCC)[1], held from 7 – 18 December 2009, closed with a broad agreement on the Copenhagen Accord.[2] The conference was subject to unprecedented public and media attention, and more than 40,000 people, representing governments, non-governmental organisations, intergovernmental organisations, faith-based organisations, media and United Nations (UN) agencies applied for accreditation at the conference. One of the main agendas of the COP15 was to decide on a post-Kyoto protocol[3], which would basically serve as the framework based on which the world would address climate change beyond 2012. This article will narrow the scope to Malaysia's commitment to mitigate impacts on this region, especially in relation to our coastal and marine environment.

Figure 1: The Coral Triangle Initiative (CTI) area
Source: http://assets.panda.org/img/original/coral_triangle_map.gif

National Initiatives on Coastal and Marine Ecosystems-Based Adaptations

The Copenhagen meeting also highlighted the central role of oceans in regulating climate and temperature and the disproportionate impacts that ocean warming, sea level rise, extreme weather events, and ocean acidification will have on the viability of marine ecosystems, fisheries and the sustainability of human livelihoods. With reference to this, the Coral Triangle Initiative (CTI) countries (Indonesia, the Philippines, Malaysia, Timor Leste, Solomon Islands, and Papua New Guinea) were also represented at the meeting in Copenhagen with the focus on climate change and the mitigation efforts undertaken in this region. The CTI sub region (Figure 1) is the epicentre of marine life abundance and diversity on the planet, holding more than 75% of the known corals and over 3,000 species of fish. These resources are of enormous importance to the livelihoods of more than 240 million people surrounding the area. As such, there is a presence of huge concern over sea level rise and the increase in ocean temperatures and acidity on the coastal and marine resources, indirectly affecting the people.

It is widely accepted that oceans play a critical role in people's daily lives, and impacts brought about by climate variability and change have become one of the greatest threats to the survival of the coral triangle; thus calling for all parties at the COP15 in Copenhagen to support the adaptation and mitigation measures put forward by the six triangle initiative countries. Representatives from these countries called on world leaders to recognise and act upon the threat climate change poses to marine environments, particularly the adverse impacts on coral reefs, fisheries and food security.

Meanwhile new evidence is also emerging on the climate mitigation potential of ecosystems. A recent United Nations Environment Programme (UNEP) report, compiled with scientists, estimated that carbon emissions equal to half the annual emissions of the global transport sector are being captured and stored by such marine ecosystems as mangroves, salt marshes and seagrasses alone. Recognising these threats, calls were made for the inclusion of a marine component within the negotiations text of the UNFCCC.

There is real recognition that healthy ecosystems from coral reefs and wetlands to mangroves and fertile soils are the key to successfully adapting to climate change. As such, the CTI on coral reefs, fisheries and food security basically provides a framework for the six countries to ensure the sustainable management of the area. The CTI is being implemented with support from a number of international partner organisations. More than USD300 million has been raised to complement government resources, in cooperation with the Asian Development Bank, the Australian Government, Conservation International, the Global Environment Facility, the Nature Conservancy, the US government and the World Wide Fund for Nature.

Significance of the Coral Triangle Initiatives (CTI) in Mitigating Adverse Impacts from Climate Change

According to the International Panel on Climate Change (IPCC), emission cuts of at least 50% from 1990s levels are required by 2050. This is the target that is envisioned to limit an increase in global temperatures to 2°C in comparison

1. The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit in June 1992. This treaty is considered legally non-binding as there are no mandatory limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms.

2. The Copenhagen Accord is a non-legally binding document on COP decisions. Among others, the document highlights that climate change is one of the greatest challenges of this time and emphasises strong political will to combat the issue in accordance with the principle of common but differentiated responsibilities and respected capabilities, stresses on enhanced national actions and international cooperation on adaptation and building resilience, requires target cuts in global emissions to be according to science, and also agrees for establishment of funds and technology transfer from the developed countries; to name a few.

3. This is a protocol to the UNFCCC, aimed at combating climate change. The Protocol was initially adopted in December 1997 in Kyoto, Japan and entered into force in February 2005. As of November 2009, 187 states have signed and ratified the protocol.

to pre-industrial times. This is important to prevent climate change from having irrevocable consequences and negative impacts on people, ecosystems and food systems. The IPCC report in 2007 highlighted that even under the most optimistic scenarios for concerted global efforts to cut emissions, greenhouse gas concentrations in the atmosphere may take at least 20 years to stabilise. Therefore, effective mitigation and adaptation actions must be identified and implemented as early as possible.

Climate change has been projected to impact broadly across ecosystems, societies and economies; increasing pressure on livelihoods and food supplies. For instance, coral reefs provide habitat for a diverse ecosystem and extreme water temperatures can cause the symbiotic algae in corals to leave, resulting in coral bleaching. When bleached corals do not recover, algae may grow over the corals resulting in an algae-dominated ecosystem. Coral destruction can lead to declines in reef community biodiversity and the abundance of a significant number of individual species. These would impose adverse impacts on the survival of the coastal communities, relying on the sea and its resources for their daily livelihoods and survival.

Nevertheless, besides the impacts on the coastal and marine ecosystems, the critical role of these ocean ecosystems in mitigating impacts from climate change has been vastly overlooked. Recent literature has highlighted the critical role of seas and ecosystems in maintaining climate. For example, UNEP (2009) has estimated that about 50% of the carbon in the atmosphere is cycled into the oceans. However, we are clearing and damaging the very coastal and marine ecosystems that are absorbing and storing greenhouse gases in the first place, via unsustainable and damaging practices. This in turn will accelerate climate change, putting at risk economically-important assets such as coral reefs and marine biodiversity, indirectly affecting the livelihood of coastal communities and economies of countries.

So, how can CTI move this initiative forward? Among others, the three main elements that need to be emphasised include:

1 **Developing a knowledge base on the subject matter:** This is important so that planning takes into account the greater possibility of events and their impacts, besides providing useful lessons to design robust and responsive adaptation systems. Improved knowledge will be valuable, e.g. projections of future fish production level, detailed impact predictions on specific fisheries, improved tools for decision-making under uncertainty, and improved knowledge of who is or will be vulnerable with respect to climate change and food security impacts and how they can be addressed.

2 **Building capacity to respond to the issues accordingly:** Policy-making and action planning in response to climate change involves not only technically concerned agencies, such as departments responsible for fisheries, environment science and education, but also those for national development planning and finance. These institutions, as well as communities or political representatives at the national level should be identified to receive targeted information and capacity building.

3 **Establishing public-private partnerships to address the matter:** Partnerships would also need to be built and strengthened amongst the public, private, civil society and non-governmental organisations.

The CTI is only one of the many mechanisms to reduce and mitigate adverse impacts from climate change. Nevertheless, it is likely to be the first such mechanism to take regional effect, if not international, and can clearly make an early and important contribution. We can therefore use an unprecedented opportunity to address two problems at once: mitigating climate change while securing our important natural ecosystems and resources in the area. Win-wins don't get better than that!

Charting the Way Forward

There is no single approach that would act as a solution for the stakeholders. Furthermore, times have changed since the Kyoto Protocol era, when developed countries represented more than half the global emissions. Presently, the problems can no longer be resolved without developing countries sharing the burden as well. It is therefore essential that the structural changes are recognised and a comprehensive framework is developed for a fair and effective solution instead of competition over numerical targets. It is consequently important that a framework be developed, not so much emphasising on the numerical targets, but to come up with initiatives reflecting on the national circumstances in paving the way for climate change control and mitigation. It is of opportune time that climate change policies seek new schemes for international cooperation, before it is too late. There is an urgent need to create a mechanism to complement the UN process, if not to the extent of replacing it through bilateral or regional cooperation.

Basically, no country can tackle the issue of climate change by taking actions individually. Therefore, Malaysia should develop an improved approach by mobilising technology transfer by industry or sector to serve as a basis towards efforts to reduce emissions of greenhouse gases. This would also indirectly work harmoniously with the Copenhagen Accord which recognised the necessity of mitigation action on the part of developing countries. Besides, the country should contribute to curbing climate change by enhancing bilateral and regional ties in technology transfer and financial assistance from the developed countries based on Malaysia's industrial and technological strengths.

Also, taking into consideration the importance of our coastal and marine ecosystems to the people, we should leverage on the existing CTI mechanism to further strengthen our collaborations with the other countries in this region to combat climate change. Perhaps by taking some of these actions, climate change negotiations that took place in Copenhagen could be ripened, and channeled into a stronger representation of developing countries like Malaysia in future climate change negotiations.

References

Coral Triangle Initiative (CTI) on Coral Reefs. (2010). Fisheries and Food Security. Secretariat. Retrieved 23 February 2010 from *http://www.cti-secretariat.net/*

Malaysia leads green agenda. *The Star*. 24 January 2010, Sunday.

Summary of the Copenhagen Climate Change Conference. 22 December 2009. *Earth Negotiations Bulletin*, Vol. 12 No. 459. International Institute for Sustainable Development (IISD).

United Nations Environment Programme (UNEP). (2009). Supporting Countries in Meeting the Climate Change Challenge: UNEP's Priorities for Catalysing a Green Economy. 9 pp. Retrieved 15 January 2010 from *http://www.unep.org/PDF/COPENHAGEN_FIN_COMPILED_TUES_8_DEC.pdf*

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POST COPENHAGEN: A Greener Workforce?

The Climate Conference in Copenhagen in December 2009 was essential for the world's climate, the Danish government and the United Nations Framework Convention on Climate Change (UNFCCC) in injecting solid efforts in outlining the Copenhagen Accord to deal with global warming and climate change.

Nonetheless, the Conference ended only with vague commitments contained in the non-binding Copenhagen Accord.[1] Diplomats had raised concerns that there was insufficient negotiating time scheduled to resolve the many deadlocks and it was this factor that marred the Copenhagen meeting. [2]

A series of problems remain unresolved, ranging from the long-standing stand-off between rich and poor nations over the scale of emissions targets and climate financing, through to technical issues relating to carbon trading, emission reporting and even the structure of the negotiations. Even representatives of the world of work – employers, workers and governments – who came together as the International Labour Organization (ILO), are aware and ready for the profound changes in production, consumption patterns, and the transformation of enterprises, jobs and employment pattern that will be impacted as a result of the Copenhagen Accord. [3]

Post Copenhagen, many initiatives appear to be discussed in many industries and sectors to make the workforce much 'greener'. The Green Collar Association (GCA), USA has outlined initiatives[4] for the Federal government to provide targeted financial and regulatory incentives to corporations, labour unions, and non profit organisations that invest in the (re)training and education of skilled workers and professionals to equip them with the skills and tools to address the requirements of a green economy.

The Green Workforce Preparedness Initiative by GCA will result in:

- **MORE JOBS**: Creation and retention of jobs, for professionals as well as skilled workers, in the US and Canada that would otherwise be shipped overseas
- **COMPETITIVE ADVANTAGE**: A higher skilled and more capable workforce that will spur new ideas and innovations, allowing corporations to be the leaders in the new economy
- **CLEANER ENVIRONMENT**: Those working in the green economy become better stewards of their own environment
- **IMPROVED STANDARDS OF LIVING**: Great opportunity for working poor to learn new skills and in doing so elevate themselves and improve their standards of living

With a labour force increasing internationally by 45 million a year, some 300 million additional jobs will be needed from now to 2015.[5] Although, the world is still struggling to bounce back from the current state of the economy, we cannot afford to delay our response to the climate change challenge. In the past, we have over-emphasised the economy, the financial sector and under-valued the social and environmental dimensions of sustainability.[3]

Over at the national front, in the budget speech for 2010, the Prime Minister of Malaysia announced the establishment of Green Technology Financing Scheme (GTFS) amounting to RM1.5 billion in an effort to improve the supply and utilisation of green technologies. The scheme could benefit the workforce of companies who are producers and users of green technology. Although, the Copenhagen Accord is regarded as a failure, Malaysia can do more to attest to the world that we are conscious of the impact of climate change and we are getting our work force ready for the transformation required to deal with climate change.

The four pillars of the Green Technology Policy[6] have been discussed elsewhere in this issue of IMPAK. Suffice to say that Strategic Thrust 3 of the Green Technology Policy of the Ministry emphasises the intensification of the workforce in green technology. Skilled, qualified, competent and productive human resources are crucial to green technology development.

This could be achieved through: (i) design and enhancement of training and education programmes to improve human resource capacity related to green technology; (ii) provision of financial and fiscal incentives for students to pursue green technology disciplines at undergraduate and postgraduate levels; (iii) implementation of retraining programmes and apprenticeship schemes to enhance competency of the semi-skilled labour required to meet the demands of the green technology industry; (iv) formulation of grading and certification mechanisms for competent personnel in green technology; and (v) exploitation of brain gain programmes to strengthen local expertise in green technology.

Nonetheless, the launch of the National Key Result Areas (NKRAs) and National Key Performance Indicators (NKPIs) left the environment out of their six thrust areas (which included: crime reduction, combating corruption, improving education, raising the living standards of low-income households, upgrading rural basic infrastructure and improving urban public transport). It is hoped that at the re-evaluation of the NKRAs, a thrust area on "environmental friendly" will be included with pre-defined NKPIs.

Improving public transport has direct relevance to greening the workforce. Transport is a major contributor to CO_2 emissions and consequently climate change. An efficient public transport system should reduce drastically the number of single passenger cars on the road and consequently help towards a reduction in our carbon footprint discussed elsewhere in this issue. Office work spaces build on our Green Building Index should be another priority of the government if we are to meet a 40% carbon reduction pledge.

In conclusion, post-Copenhagen, there are movements nationally and globally to gain commitments from developing and developed nations to prevent further climate change catastrophes. Only with concerted and holistic efforts by all the stakeholders can we achieve the intended goals of the Copenhagen Accord.

References

[1]United Nations Framework Convention on Climate Change (UNFCC) (2009). Framework Convention on Climate Change – Copenhagen Accord. 7-18 Dec. 2009.

[2]James Murray, James (2010). UN Confirms Extra Bonn Climate Meeting. *BusinessGreen*. Issue 23 Feb 2010

[3]Somavia, Juan (2009). Greening the Workforce. UN Chronicle. No. 3&4.

[4]Green Collar Association (GCA) (2009). Green Collar Association Sends Executive Members to Copenhagen Climate Conference COP15. Retrieved on 24 March 2010 from *http://www.free-press-release.com*

[5]United Nations (2009). *World Economic Situation and Prospects*. UN, New York.

[6]Ministry of Energy, Green Technology and Water (2010). The Official Website of Ministry of Energy, Green Technology and Water. Retrieved on 24 March 2010 from *http://www.kettha.gov.my*

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CONSUMERISM & BUSINESSES
Responding to Climate Change

Over the past several years, public recognition of global warming and climate change has increased greatly. Sustainability has begun to assert itself across consumers, hence businesses which fail to respond to "green" and environmental initiatives might find their brands eventually excluded from the consumers' hearts and wallets. Companies are compelled to get their act together, or get out of the game. For example, Tesco, recently proclaimed that combating climate change was top in the priority list, and announced that the company's multibillion-pound business would be zero-carbon by 2050. Meanwhile Coca-Cola has announced that as much as 70% of Coca-Cola's future advertising would have an environmental focus, and that Coca-Cola is aspiring to reduce the energy footprint of its 10 million refrigerators across 206 countries by 40%.

It is predicted that Malaysian businesses and companies will soon jump into the "green marketing" bandwagon given the recent launch of The National Green Technology Policy mid-last year. At the point of writing, the Federal Agriculture Marketing Authority (FAMA) is already offering their Malaysia Best eco-label for environmentally friendly agricultural products while the Malaysian Energy Commission offers similar accreditation for energy efficient electrical products. The Standards and Industrial Research Institute of Malaysia (SIRIM) has also launched the national eco-labeling programme verifying products according to environmental criteria such as Environmentally Degradable, Non-toxic Plastic Packaging Material, Hazardous Metal-Free Electrical and Electronic Equipment, Recycled Plastic Products, Biodegradable Cleaning Agents and Recycled Paper. With more businesses about to commit their resources to green marketing, it is pertinent to ask the question of whether consumers are responding to green marketing initiatives.

Until now, the hype associated with climate change and the excitement of a new "green" angle to help boost sales and increase profits have diverted attention away from asking this real question.

Many businesses tend to promote green consumerism without much consideration for basic consumer needs. A cold, hard fact businesses must accept is that climate change remains relatively low on the list of priorities for all but the most eager advocates. In addition, it is reasonable to say that most of us consume altruistically. That is, the average consumer decides to buy a green product not because it is branded as green but because it satisfies needs, whatever those may be. For example, a sportswear company that is famous for its worker-friendly labour practices and Made-in-Malaysia label will not explode into the mainstream simply because it touts its green ethics. It is only when it starts identifying what its customers want – by selling "customised, trendy T-shirts for young people", that it will begin to attract a loyal stream of customers. The first lesson here is to continue keeping the product green but not try to sell it as such.

The second lesson is that although Malaysia's National Green Technology Policy is a great effort and warrants commendation, it is only by realising our potential as people and most importantly as consumers, that we can turn the policy's targets into reality. The objectives set by the policy can only be achieved not by some great act of parliament, but through the billions of choices made by consumers every day. This is not to say that the average consumer does not care about the environment. It is because "green" comprises only a small shaving of the average consumer's purchases and green is just one of several factors in one's purchase decisions.

In order to make climate change more relevant and steer consumers to buy, businesses could position climate change as a threat to more critical issues such as health and the economy. While global warming is an abstract, complex and long-term concept, the idea of one battling with health issues evokes some more physical and tangible threats to consumers. Businesses can learn from the success of the organic food industry which has been motivated by healthy and better tasting food, rather than by the concern about environmentally-sustainable farming. The number one reason why consumers buy greener products is not for the sake of Mother Earth but their own health and well-being. The sooner businesses can come to terms with this, the better their green marketing strategies will be.

The one thing that businesses should never do but have done in the past is communicating the message that one's product or company is greener than it actually is (green washing). Whether intentionally or otherwise, this strategy can result in a tarnished reputation and lost customers. There is already a lot of cynicism amongst consumers given the increase in misleading claims as businesses scuttle to take advantage of the opportunities that green marketing represents. Movies like "Supersize Me" and "Wal-Mart - The High Cost of Low Price" have taught consumers to question even the most truthful green marketing claims. Thus, businesses today will need to be transparent and provide every avenue possible for consumers to trust in the legitimacy of one's product and its specific claims.

Finally, green marketing has become increasingly significant for businesses around the world, Malaysia included. A research stream called "Green consumerism" has just recently emerged to explore the application of green brands in the market and to communicate product initiatives with impact. Businesses seeking to gain market share and maximise profits should ensure that they are in touch with recent developments and have access to the latest findings arising from this research stream.

Reference

Hartmann, P & Ibanez, V.A., Green (2006). Value Added. *Marketing Intelligence & Planning*, 24 (7): 673-680.

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Bearing the Burden of Climate Change

Who will bear the burden of climate change? Everyone, I would say. But the intensity and degree of impact on people will be different. According to the Intergovernmental Panel on Climate Change (IPCC), its impacts will vary among regions, generations, age, classes, income groups and gender. But the sad truth is that people who are most vulnerable and marginalised are likely to feel the most impacts. The poor in developing countries, particularly those working in natural resource sectors such as agriculture, will be disproportionately affected by climate change and variability.

More important, the impact will not be the same for gender – women are increasingly seen as more vulnerable given their different roles, responsibilities, decision making in the family, access to land and natural resources and opportunities and needs. Women's vulnerability to climate change can be traced to social, economic and cultural factors. 70% of the 1.3 billion people living in poverty are women while 40% of the poorest urban households are headed by women. Women's role in food production is dominant (10-80%) but sadly they own less that 10% of the land they cultivate. In the rural areas they shoulder the bulk of the responsibility for household water supply and energy for cooking and heating (gathering firewood) as well as for food security. In the Near East, women make up almost 50% of the agricultural workforce and are responsible for the more time-consuming and labour intensive tasks that are carried out manually or with the use of simple tools. In brief, women are generally engaged in subsistence farming, particularly horticulture, poultry and raising small livestock for home consumption.

During extreme weather such as droughts and floods, women have to work very hard to ensure the livelihood of their households giving themselves less time for training for skills enhancement, education or to earn extra income. Furthermore in many societies, socio-cultural norms and child care responsibilities prevent women from migrating or seeking refuge in other places when a disaster hits. In the Middle East and in Africa where female literacy is low, coupled with women's inaccessibility to resources, decision making processes and limited mobility, a disaster is likely to impact them disproportionately.

Oxfam International reported disproportional fatalities among men and women in the tsunami that hit Asia at the end of 2004. Females accounted for about three-quarters of deaths in 8 Indonesian villages and almost 90% of deaths in Cuddalore, the second most affected district in India. Of the 140,000 who died from the 1991 cyclone disasters in Bangladesh, 90% were women. More women than men die from these natural disasters because they are not adequately warned, cannot swim well or cannot leave the house alone! Moreover lower levels of education reduce the ability of women and girls to access information, including early warning and resources or to make their voices heard. In Sudan, the increase in the migration of men from the drought-hit areas of Western Sudan increased the number of female-headed households and consequently their responsibilities and vulnerabilities in disaster situation.

Human Security, Climate Change and Women*

HUMAN SECURITY	Security of Survival				Security of
SECURITY ASPECTS	Mortality/Injury	Health	Food Security	Water Security	Energy Security
CLIMATE CHANGE	• Mortality/injury from different extreme weather events/disasters	• Increase in infectious diseases • Physical and mental stress • Loss of medicinal plants/ biodiversity	• Harvests destroyed • Agricultural production changes/ drops • Fish stocks decrease	• Lack of water • Pollution and water salination • Flooding	• Lack of biomass fuel • Dysfunctioning hydropower • Disruption in electricity supply
IMPACT ON WOMEN	• Overall more women than men die or are injured	• Bearing the burden of taking care of the sick/ disabled • Increase in mental stress • Lack of access to reproductive health services • Greater risk of HIV/AIDS due to early marriage, forced prostitution, sexual violence	• Bearing the burden of more time, energy and budget requirements for food production and purchase • Stand in line for humanitarian food distribution • Increase in work burden • Increase in calorie deficiency and hunger	• More time/energy needed to provide water for household/ farm • Suffer from water related health problems	• More time and energy needed to collect fuel • Increase in work burden • Inferior energy sources – more indoor pollution
COPING AND ADAPTIVE STRATEGIES BY WOMEN	• Searching for safe shelter/improving homes • Disaster risk reduction and preparedness by women's groups	• Increase in tasks for family care • Use of medicinal plants and applications of alternative healing methods	• Adapting agricultural practices/ switching to other crops/animals • Saving food, seed and animals • Adapting to new diet	• Water harvesting, including rainwater • Purchasing water from water vendors	• Switching to other energy sources • Use of energy-saving devices • Reforestation
POLICY OPPORTUNITIES FOR WOMEN /MEN	• Gender specific and sensitive disaster risk reduction and preparedness • Early warning system	• Acess to health facilities, especially reproductive health services for women • Monitoring health situation of most vulnerable groups	• Agricultural adaptation: mixed cropping, better suited crops/livestock • Affordable and ecologically sound agricultural inputs • Nutritioning extension • Secure land rights for women • Credit and marketing facilities • Managing fish stocks for local fishing communities	• Safeguarding affordable and safe drinking water • Efficient irrigation technologies • Safe sanitation facilities • Preserving wetlands	• Providing fuel sources, especially clean sustainable energy • Providing training in using energy saving devices • Ecological restoration

Volunteers create awareness on climate change in Mumbai.
Source: www.businessdailyafrica.com

Improving Women's Adaptation to Climate Change

Despite their vulnerability and being victims of climate change, women are also seen as effective agents for promoting adaptation and mitigation against the effects of climate change. There is much inherited knowledge, skills and expertise among women particularly the older women in relation to water harvesting, storage, food preservation and natural resource management. These skills are the ones that will enhance local adaptive capacity of livelihood in a community. In order to enhance the adaptive capacity of women worldwide, particularly the rural women, it is suggested that policymakers consider the following seriously:

1 Adaptation initiatives should identify and address gender-specific impacts of climate change particularly in areas related to water, food security, agriculture, energy, health, disaster management and conflict. Important gender issues associated with climate change adaptation such as inequality of access to resources, including credit, extension and training services, information and technology should also be taken into consideration.

2 Women's priorities and needs must be reflected in development planning and funding. Women should be part of the decision making at the national and local levels regarding allocation of resources for climate change initiatives. It is also important to ensure gender-specific investments in programmes for adaption, mitigation, technology transfer and capacity building.

3 Funding organisations and donors should also take into account women-specific circumstances when developing and introducing technologies related to climate change adaptation and attempt to remove their economic, social and cultural barriers that could constraint women from benefiting and making full use of them. Involving women in the development of new technologies can ensure that they are adaptive, appropriate and sustainable.

4 Finally at national level, efforts should be made to mainstream gender perspective into national policies and strategies as well as related sustainable development and climate change plans and policy and programme interventions.

Acknowledgement

It is gratefully acknowledged that much of the information contained in this article was drawn from a special issue of the UN Chronicle entitled "To Protect Succeeding Generations", Vol. XLVI No 3 & 4, 2009.

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Livelihood			Dignity		
Environmental security	Shelter security	Economic security	Basic human rights	Capacity	Participation
• Environmental processes and services jeopardised	• Housing, infrastructure and services destroyed	• Decrease in income generating opportunities (e,g. less credit)	• Triggers violation of basic human rights	• Lack of opportunities for education and income generation	• None or limited involvement in decision making; lack of information; lack of time
• Poorest women living in insecure environment most affected	• Limited land rights • Not included in land management • Decrease in mobility	• Women in informal sector most affected • Household expenses increase • Males migrate – more female headed households	• Increase in domestic violence against women; suffering from wars/ conflicts over resources	• Girls drop out of school • Little time for education/ training/income generation	• Lack of participation in climate change negotiations, planning and activities • Women specific priorities neglected
• Building more sturdy homes • Clean up and regeneration of environment • Forming advocacy groups	• Building more sturdy homes • Seeking shelter/migration	• Saving expenses or money for a lean time • Selling of assets and services • Alternative income generating activities	• Social networks and groups	• Self-training, support groups and networks	• Organisation • Advocacy • Participation
• Ecological restoration • Safe shelters	• Safe shelters and sturdy homes • Land and housing rights for women	• Affordable and reliable credit and financial facilities for women • Providing alternative livelihood options • Ensuring women's access to climate change funding and technologies	• Counseling and legal services • Defending women's rights	• Ensuring education, particularly of girls during/ after disasters • Skills training • Environmental regeneration	• Access to information • Ensuring women's participation in planning/ decision making/ climate change and mechanisms • Involving men in gender training • Generate and use sex disaggregated data

**Some information may not directly apply to women in Malaysia*

Event Highlights

Department of Environment, Malaysia

February 2010

Information Requisition Form Workshop: Sustainable City–Environment Award 2009/2010

The Department of Environment (DOE) in collaboration with the Institute for Environment and Development (LESTARI) Universiti Kebangsaan Malaysia organised a 2-day Information Requisition Form Workshop on 23-24 February 2010 in Seremban to ensure accurate and comprehensive documentation for the Sustainable CIty–Environment Award 2009/2010. As 2010 is the assessment year, the workshop aimed to ascist local authority officers on filling out information required in the Information Requisition Form. Of the 34 Local Authorities that had been nominated, 30 sent their representatives to participate in the workshop. The first-day programme of the workshop saw the participants conducting a field survey in Taman Tasik Seremban, Urban Forest (Malaysia Garden), Bandar Seremban and going on a visit to Bandar Enstek. The second day proceeded with a briefing on the Sustainable CIty–Environment Award and interactive training on the Information Requisition Form.

March 2010

Launching of *Prasekolah Lestari* (Sustainable Preschool) Environmental Awareness Module

Jointly organised by Department of Environment (DOE) and Subang Jaya Municipal Council (MPSJ), the launching of *Prasekolah Lestari* (Sustainable Preschool) Environmental Awareness Module and Workshop was held on 6 March 2010 at Dewan Kenanga, Subang Jaya Municipal Council. The Sustainable Preschool Environmental Awareness Module was launched by Dr. Ir. Shamsudin bin Hj. Ab Latif, Deputy Director General (Development) of DOE. Also present was Tuan Haji Slamat bin Hamzah, MPSJ Secretary. The five (5) series of Environmental Awareness Modules are specially designed to create environmental awareness among children aged between 3 to 6. With attractive illustrations, simple instructions and fun-to-do activities, these books make learning meaningful and enjoyable.

The one-day workshop was conducted for 75 preschool teachers and operators under MPSJ's administrative area, with the objective of introducing the Environmental Awareness Module. This module is aimed at equipping teachers and operators with the necessary skills to conduct environmental activities for preschoolers. Dr Mahani binti Razali from the Sultan Idris Education University (UPSI) presented a paper on environmental aspects of early childhood education while Encik Kamarulzaman Awang from Yayasan Pembangunan Keluarga Terengganu conducted group discussions and made presentations on environmental activities. The module is envisaged to benefit teachers, operators and preschoolers alike.

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ISSN 1394-0724
9 771394 072003

Quarterly Publication of the Department of Environment
Ministry of Natural Resources and Environment