



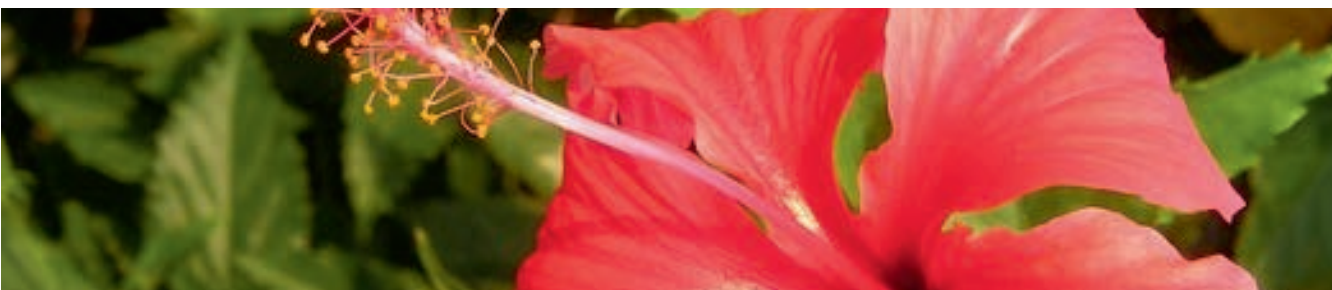
**FRAMEWORK, APPROACHES, PARAMETERS AND MEASURES  
FOR CLIMATE CHANGE AND TOURISM IN THE ASSOCIATION  
OF SOUTHEAST ASIAN NATIONS (ASEAN).**

Association of Southeast Asian Nations (ASEAN).

2013

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## INTRODUCTION

The Southeast Asian region, like other regions in this Earth, is currently experiencing, and will continue to experience, changes in the climate. This challenge is highlighted by the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report. The risks of climate change to Southeast Asia are also reflected IPCC's Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX).

Studies show that there has been an increase in warm days and consequently a decrease in cold days for Northern areas although science says that it has insufficient evidence to say this for the Malay Archipelago. Trends in minimum temperatures reflect a likely increase in warm nights and

consequently, a decrease in cold nights for the northern areas. There are, on the other hand, spatially varying trends in heavy precipitation, dryness and drought but insufficient evidence to conclude regarding trends in heat waves. Because of these trends, the projected changes for 2071-2100 based on the IPCC A2/A1B scenarios include likely occurrence of warm days and warm nights, and frequent and/or longer warm spells and heat waves in some areas. Despite the inconsistent indication of change in most models, there is a possibility of the occurrence of more frequent and heavy precipitation over most part of the region. On the other hand, inconsistent changes are projected in dryness and drought occurrence. The changes in

climate will most likely impact significant natural assets of Southeast Asian countries and these changes will in turn affect the economic, physical, social and even institutional dynamics of countries. At the same time, any changes on the economic, physical, social and institutional arrangements of countries will likely affect climatic conditions.

It is in this context that the tourism sector of the Association of Southeast Asian Nations (ASEAN) is deemed at risk to changing conditions of the climate. ASEAN, in its Tourism Strategic Plan for 2011-2015, identified key target market segments that include generic and mass travel, experiential travel, creative travel, adventure travel, extended, long stay travel and business-related travel.

Below is a table of those market segments (Table 1). In examining the data in Table 1, all these segments may possibly be affected by changing climatic conditions. Although no conclusive scientific study has been yet done across the ASEAN to establish such link except for country studies and reports on impacts of climate and weather-related hazards which will be presented later in this paper, it is rather apparent how changing climate and weather conditions may possibly interact with other factors (e.g. geophysical and land-use challenges and existing vulnerabilities) to create risk factors. A study in 2008 by the United Nations Environmental Program (UNEP), World Tourism Organization (WTO) and World Meteorological Organization (WMO)<sup>1</sup> points out that climate

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<sup>1</sup> Simpson, M.C., Gössling, S., Scott, D., Hall, C.M. and Gladin, E. (2008) Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices. UNEP, University of Oxford, UNWTO, WMO: Paris, France

change will have multiple impacts on tourism sectors namely:

- Direct climate impacts because climate is a key element in selecting suitable and appropriate locations of various tourism activities. Changes in climate resulting to climate extremes, for instance, can result to “infrastructure damage, additional preparedness requirements, higher operating expenses” among others.
- Any change in the environment resulting from changes in the climate (e.g. water, biodiversity loss, reduced landscape aesthetic, altered agriculture production, increase in hazards, coastal erosion and inundation, damage to infrastructure, increase in vector-borne diseases) will heavily affect tourism activities.
- Mitigation policies of countries, e.g. reduction in GHG emissions, may reduce tourist inflows or trigger changes in travel patterns and destination choices. Southeast Asia tourism which encourages travel around its many islands may be affected by this policy.
- Where changing climatic conditions trigger changes in production rates of countries, ie GDP, purchasing power of its citizens will be most likely affected. Tourism thrives in growth and may be affected by climate-related economic changes. Moreover, the study is looking into the possibility of climate-related security risks that will affect decisions regarding tourism destinations.

These societal changes resulting from climate change are among those impacts considered to affect tourism. If the UNEP-UNWTO-WMO study were to serve as the basis of analysis, it is rather apparent that most market segments for tourism selected by the ASEAN are at risk to changing climate patterns. Because tourism in ASEAN encourages travel to its many

island attractions, policies on mitigation may impact heavily on travel and tourism choices suggested. It is, however, to be noted that the very same at risk travel segments or deemed contributory to GHG emissions, can be very sources of responsive mitigation actions and venues to develop adaptive capacities to the challenges of a changing climate.



Table 1. ASEAN Tourism Target Market Segments.<sup>2</sup>

Generic and mass travel	Experiential Travel	Creative Travel	Adventure Travel	Extended, long stay travel	Business-related travel
Sightseeing	Health tourism	Museums	Extreme tourism	Housing	Meetings
Food	Spas	Art galleries	Adventure tourism	Food	Incentives
Shopping	Culinary tourism	Festivals	Community-based tourism	Insurance	Convention
Visiting family	Community-based tourism	Music	Gap year tourism	Car rentals	Exhibitions
Entertainment	Ecotourism	Handicraft		Maids and drivers	
Urban experiences	Volunteer tourism	Performing arts		Health care	
	Marine-based tourism				

<sup>2</sup> ASEAN Secretariat 2012, ASEAN Target Market Segments, <http://www.tceb.or.th/images/pdf/statistics/Asean-Travel-Tourism.pdf>





# ASEAN, CLIMATE CHANGE AND TOURISM

The recognition of the challenges of climate change and how the region may also help address these challenges were well within the ASEAN consciousness when in crafted the Roadmap by the ASEAN Community 2009-2015 and the ASEAN Vision 2020. Since 2007, ASEAN has made commitments and statements supporting actions to address climate change<sup>3</sup>:

- ASEAN Declaration on Environmental Sustainability (13th ASEAN Summit in 2007)
- ASEAN Declaration on COP-13 to the UNFCCC and CMP-3 TO THE Kyoto Protocol (13th ASEAN Summit in 2007)
- Singapore Declaration on Climate Change, Energy and the Environment (3rd EAS Summit in 2007)
- Joint Ministerial Statement of the 1st EAS Energy Ministers Meeting (2007)
- Ministerial Statement of the of the Inaugural EAS Environment Ministers Meeting (2008)
- ASEAN Joint Statement on Climate Change to COP 15 to the UNFCCC and CMP 5 to the Kyoto Protocol (15th ASEAN Summit in 2009)
- Singapore Resolution on Environmental Sustainability and Climate Change (11th AMME in 2009)



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<sup>3</sup> Letchumanan, Raman, (2012), Is there an ASEAN policy on Climate Change?, <http://www2.lse.ac.uk/IDEAS/publications/reports/pdf/SR004/ASEC.pdf>

That commitment is made manifest in the structure of ASEAN's existing work (please see Figure 1 below). Furthermore, in Section D10 of the Blueprint for the ASEAN Socio-Cultural Community (2009-2015)<sup>4</sup>, eleven (11) specific action points on climate change are clearly mentioned:

- Encourage ASEAN common understanding on climate change issues and where possible, engage in joint efforts and common positions in addressing these issues;
- Encourage the efforts to develop and ASEAN Climate Change Initiative (ACCI)
- Promote and facilitate exchange of information/ knowledge on scientific research and development (R and D), deployment and transfer of technology and best practices on adaptation and mitigation measures, and enhance human resource development;
- Encourage the international community to participate and contribute to ASEAN's efforts in afforestation and reforestation, as well as to reduce deforestation and forest degradation;
- Develop regional strategies to enhance capacity for adaptation, low carbon economy, and promote public awareness to address effects of climate change;
- Enhance collaboration among ASEAN member states and relevant partners to address climate-related hazards and scenarios for climate change;
- Develop regional systematic observation system to monitor impact of climate change on vulnerable ecosystems in ASEAN;

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<sup>4</sup> ASEAN Secretariat, 2009, ASEAN Socio-Cultural Community Blueprint, Jakarta: ASEAN Secretariat.

- Conduct regional policy, scientific, and related studies to facilitate the implementation of climate change convention and related conventions;
- Promote public awareness and advocacy to raise community participation on protecting human health from the potential impact of climate change;
- Encourage the participation of local government, private sector, non-governmental organizations, and community to address the impacts of climate change; and
- Promote strategies to ensure that climate change initiatives lead to economically vibrant and environmentally-friendly ASEAN Community taking into account win-win synergy between climate change and economic development.

More importantly, in the area of tourism, ASEAN has prioritized Strategic Directions and actions aimed at increasing quality of services and human resources in the region. To achieve such end, ASEAN committed to develop a set of ASEAN tourism standards with certification process which includes a process that will allow its tourism services and human resources to address the climate change issue.

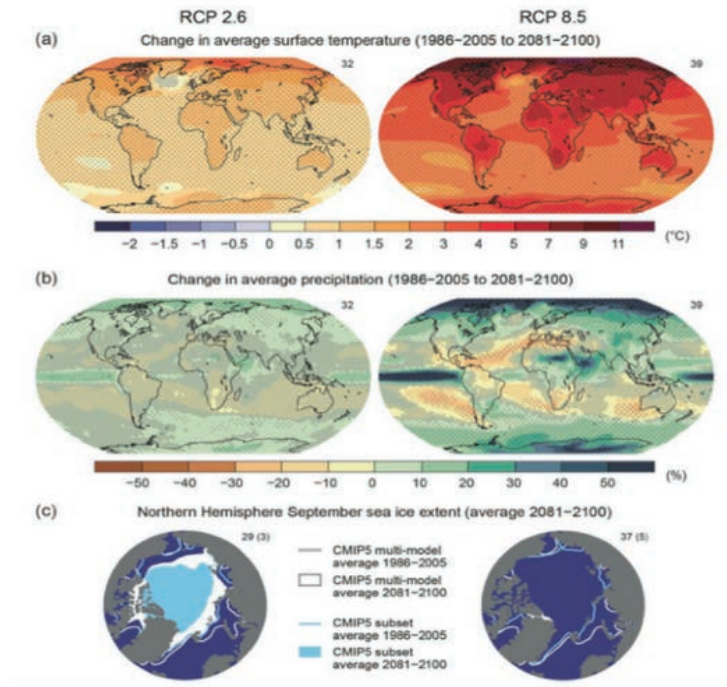


**REGIONAL AND NATIONAL**  
**CLIMATE CHANGE**  
**CIRCUMSTANCES & TOURISM**

This paper has earlier discussed the recent findings of the IPCC on projected climate change in the Southeast Asian region (Figure 2). The UNEP-UNWTO-WMO report further highlights that there is still gap in terms of assessing the state of climate change in the Southeast Asian region, hence, the more recent studies cannot make conclusive findings for the region. A regional information gap in climate science presents a challenge to ASEAN. The information gap is vital in the crafting of climate

change responses because appropriate measures for adaptation and mitigation need to be evidence-based. Without sufficient data to inform actions, countries within the ASEAN may run into the risk of maladaptation or contributing to increasing emissions. A regional information gap in climate science presents a challenge to ASEAN. The information gap is vital in the crafting of climate change responses because appropriate measures for adaptation and

*Figure 2. IPCC Projections from the 5<sup>th</sup> Assessment Report on Climate Change*



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In 2010, a paper on the geopolitical implications of climate change for Southeast Asia was prepared by independent research institutions.<sup>5</sup> The study for the National Intelligence Council of the US by private research institutions affirms that their scientific findings point to the direction of the following possibilities for the region:

- Sea-level rise, salt water intrusion into estuaries and aquifers, coastal erosion, displacement of wetlands and lowlands, degradation of coastal agricultural areas, and

increased susceptibility to coastal storms

- Water stress due to water shortages or water excess in low-lying flood-prone areas
- Variations in temperature, precipitation and atmospheric carbon dioxide concentration will affect expansion of growing areas, length of the growing period and crop yields.
- Inundation of coastal areas and storm surges will render coastal zones vulnerable
- Climate-change related degradation and destruction of mangroves and coral reefs
- Coral bleaching and reduced marine biodiversity due to rising ocean temperatures especially in Southeast Asia's archipelagos;
- Social, political and economic changes, namely: (1) impact on agriculture like loss of fertile

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<sup>5</sup> CENTRA Technology, Inc., and Scitor Corporation (2010), Southeast Asia: The Impact of Climate Change to 2030: Geopolitical Implications, Conference Report, US: National Intelligence Council. [http://www.unibaker.com/media/Southeast\\_Asia\\_Conference\\_Report.pdf](http://www.unibaker.com/media/Southeast_Asia_Conference_Report.pdf)

agricultural land and shift in growing areas (e.g. Mekong and Red River Areas) or rice production due to water stress; (2) possibility of mass, involuntary migration overstressed rural areas to overstressed cities; (3) food insecurity (e.g. Philippines, Laos, Cambodia, Indonesia) and food challenges due to dependency on importation (e.g. Singapore) may further be aggravated by climate change-related food production shortages; (4) Massive deforestation (e.g. Indonesia) due to demands for bio-fuels among others causes that can cause heavier run off during heavy rains (e.g. Philippines, Indonesia, Myanmar, Laos, Cambodia) and increasing incidence of forest fires (e.g. Indonesia and Malaysia); (5) Urban water challenges

resulting from decrease in precipitation and rapid urban growth (e.g. Bangkok, Dili, Kuala Lumpur, Manila and Singapore during the height of El Nino); (6) Weakened immune systems due to food, water, and heat stress and climate-related spread of diseases; (7) climate change-related disruption in natural resource use and extraction for revenues (e.g. Malaysia, Philippines, Burma, Indonesia); (8) Climate-related vulnerabilities among the poor; (9) climate-pressure on maritime trade routes; (10) Water stress and tourism-driven demand for water, food and land.

- Challenges on water and food supply from major river systems, ie, the Mekong River, due to glacial recession and variable precipitation.



The World Risk Index (WRI) of 2012 examines how at risk countries are to the evolving natural hazards. The WRI explains that risk is a consequence of presence of and exposure to hazards, vulnerability to hazards examined more deeply in terms of susceptibility, lack of coping and adaptive capacities.

In the list of the most at risk countries, 3 ASEAN member states are viewed to be among the 10 most at risk countries: Philippines, Cambodia and Timor Leste. For the Philippines, the reason for risk is not just because it is exposed to hazards. Common to all three countries are lack of coping and adaptive capacities while susceptibility is high in Cambodia and Timor-Leste.

Figure 3 below shows how at risk Southeast Asian populations are to hazards such as cyclones, flooding, drought, sea level rise and earthquakes. Exposure to hazards

and vulnerability interact to create risks. Vulnerability, in this context, includes susceptibility, lack of coping and adaptive capacity. To ascertain susceptibility the WRI examined public infrastructure, housing conditions, nutrition, poverty and dependencies. Government and authorities, disaster preparedness and early warning, medical services, societal networks, material coverage were assessed to determine coping capacities while adaptive capacities were measured by education and research, gender and equity, environmental status/ecosystem protection, adaptation strategies, and investments in health.

Table 2 below examines lists reported hazards based on the survey and workshop with the National Tourism Organizations, reported carbon emissions from various sources, and level of risk to natural hazards of ASEAN member countries.

# WorldRiskIndex

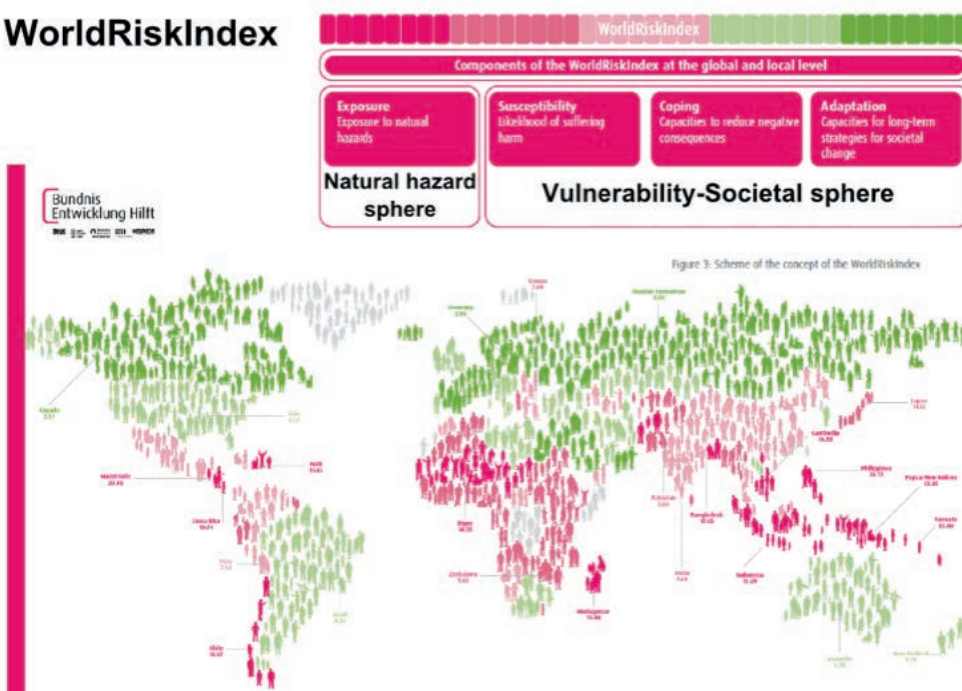


Figure 3. World Risk Index 2012<sup>6</sup>

<sup>6</sup> Alliance Development Works in cooperation with United Nations University Institute of Environment and Human Security and the Nature Conservancy, World Risk Index 2012, Berlin: Alliance Development Works

Table 2. ASEAN country data on Carbon Emissions and Risks to Natural Hazards

	Hazards	Carbon dioxide emissions from UNFCCC National Submissions	RANK in the 2012 World Risk Index (WRI)	WRI Vulnerability In %	WRI Susceptibility In %	WRI Lack of coping capacities In %	WRI Lack of adaptive capacities In %
Thailand	Increasing temperature, decreasing rainfall, increasing precipitation, sea level rise	229,088.7 Gg	92	47.03	21.96	76.42	42.72
Singapore	Sea-level rise; increasing precipitation	38,789.97 Gg	158	32.47	14.11	47.10	36.19
Myanmar	Floods, tropical cyclones, other natural hazards, decreasing precipitation, drought	No available UNFCCC National report	42	61.57	36.70	89.82	58.18
Indonesia	Increasing temperature; sea-level rise; increasing precipitation; weather extremes	1,377,982.95 Gg	33	55.48	35.45	82.16	48.83

Philippines	Increasing temperature; increasing precipitation; sea level rise; weather extremes	100,738 Gg	3	53.34	33.92	83.09	43.03
Cambodia	Increasing temperature; increasing precipitation	5141.79 Gg uptake	8	62.07	45.93	86.68	53.61
Malaysia	Temperature increase; increase in extremes within wet cycles; 0.5 rise in sea level projected	26,796.4 Gg	91	44.74	20.87	70.30	43.04
Vietnam	Increase in temperature in Northern Zones; variable rainfall across the country; sea-level rise projected	150,899.73 Gg	18	50.83	29.20	76.73	46.56
Laos	Temperature increase; increasing precipitation	50,742.91 Gg	103	60.03	43.44	85.60	51.14

Brunei Darrusalam	Temperature increase; variable projected precipitation change	No available UNFCCC National report	11	38.72	14.57	65.66	35.94
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Timor Leste	Temperature increase; variable projected precipitation change	No available UNFCCC National report	9	66.59	57.88	87.58	59.32
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**RESPONDING TO CLIMATE-  
RELATED CHALLENGES IN  
TOURISM**

Countries within the ASEAN have made commitments as to their contributions to ASEAN institutional framework on environment (see Figure 3 below). Individually, ASEAN countries have made headways in developing policies relevant to climate change and tourism work. For instance:

- Thailand has crafted the Strategic Plan on Climate Change 2008-2012, National Strategy on Climate Change 2013-2017 (Draft), and the National Master Plan on Climate Change (2012-2050);
- Singapore has developed their National Climate Change Strategy 2012 and Singapore Sustainable blueprint;
- Malaysia has a National Climate Change Policy;
- Indonesia has Government Regulation No. 52/2012 on tourism, competency and industrial certification, the Indonesia Climate change Sectoral Roadmap, Presidential Decree No. 61/2011 and Presidential Decree no. 71/2011; and Law No. 10/2009;
- Myanmar refers to its Myanmar National Forest Policy, National Environment Policy, National Sustainable Development Strategy (2009) and the Myanmar Agenda 21;
- Philippines articulates its commitment through the Republic Act 9729 (Climate Change Law), the National Climate Change Action Plan, Philippine Development Plan, Philippine Tourism Plan, Republic Act 10174 (People's Survival Fund);
- Vietnam has a National Strategy on Climate Change, a National Strategy on environmental protection, Sustainable Development

Strategy for 2011-2020, Strategy on Vietnam’s Tourism Development<sup>7</sup>;

- The Government of Timor Leste has written it National Development Plan, Vision 2020, Sector Investment Program<sup>8</sup>

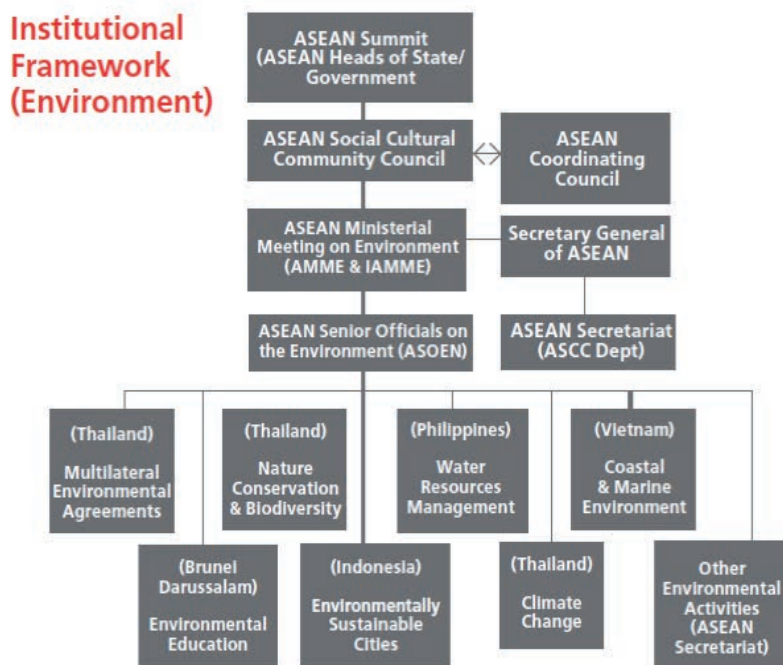


Figure 3. ASEAN Institutional Commitments per Country<sup>9</sup>

<sup>7</sup> Socialist Republic of Vietnam, 2011, Strategy on Vietnam's Tourism Development until 2020, vision to 2030, <http://chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails?categoryId=30&articleId=10051267>

<sup>8</sup> Letchumanan, Raman, (2012), Is there an ASEAN policy on Climate Change?, <http://www2.lse.ac.uk/IDEAS/publications/reports/pdf/SR004/ASEC.pdf>

<sup>9</sup> School of Business, Economics and Law University of Gothenberg 2008, Timor Leste Environmental and Climate Change Policy Brief, <http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/04/Timor-Leste-Environmental-and-Climate-Change-Policy-Brief-Draft-081001.pdf>



# EXAMPLES OF CLIMATE CHANGE MITIGATION AND ADAPTATION IN ASEAN COUNTRIES' TARGET MARKET SEGMENTS

GATEWAYS AND HUBS

SHOPPING

NATURE TOURISM

CULTURE TOURISM

CRUISE TOURISM

MARINE TOURISM

FOOD

MEDICAL TOURISM

FESTIVALS AND EVENTS

GAMING

HANDICRAFTS

CREATIVE TOURISM

ADVENTURE TOURISM

MEETINGS, INCENTIVES,

CONFERENCING,

EXHIBITIONS

BUSINESS



## GATEWAYS AND HUBS

### Generic and Mass Travel: Singapore’s Western Adventure Park Connector Network<sup>10</sup>



In Singapore, land is a scarce resource. The country is an island city-state with an area of 710 square kilometers and a resident population of about 5 million people in 2011. Despite the scarcity of space, Singapore aims to integrate their economic, social and environmental goals by building and extending green spaces within a highly urbanised environment. According to the National Climate Change Strategy of 2012, Singapore aspires to be a “City in a Garden”.

Almost 50% of Singapore is covered in greenery, and an additional 10% of Singapore’s land is set aside for parks and nature conservation. A

<sup>10</sup> [www.nparks.gov.sg/cms/docs/diy\\_guide/WAPCN\\_walking\\_trail.pdf](http://www.nparks.gov.sg/cms/docs/diy_guide/WAPCN_walking_trail.pdf)  
<http://app.nccs.gov.sg/data/resources/docs/Documents/NCCS-2012.pdf>

popular tourist attraction within the city is the Western Adventure Park Connector Network (WAPCN). This is the linking of major parks and green spaces around the island. The 20km-long WAPCN links up eight parks in western Singapore, creating a large interconnected trail for nature-loving urban dwellers. A 12km trail between Zhenghua Park and Bukit Batok Nature Park offers a taste of nature and biodiversity. A variety of activities such as biking, picnicking, rock climbing, birdwatching and leisurely hiking are available. The trail is accessible by public transport.

Efforts like the WAPCN can be considered both climate adaptive and mitigating measures. They allow for sequestration of carbon emissions because of the greenery in the area. This also provides the benefit of local climate cooling in the urban areas as a result of the city emissions and the urban heat island effect. The green areas that the WAPCN connects can also serve as safe areas in the case a hazard like an earthquake. It can be also considered adaptive because these green spaces provide shade and recreation areas. These spaces also allow for water permeation into the soil during rainfall events, thus reducing increased runoff in concrete built-up areas.

### **Changi Airport, Singapore<sup>11</sup>**

Singapore Changi Airport aims to reduce consumption of electricity and use more of recycled water at its terminal buildings over the next three years, as part of its contribution towards environmental sustainability. Various initiatives like use of natural lightings, dimming lights during off-peak hours are being done to conserve energy and increase its efficiency.

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<sup>11</sup> <http://www.changiairport.com/our-business/airport-news/towards-a-greener-changi-airport>

## **SHOPPING**

### **Setia City Mall (Setia Alam, Shah Alam) Malaysia<sup>12</sup>**

The Setia City mall has high-efficiency air-conditioning system, an integrated building energy management system, daylight sensors in the car park and mall atrium, as well as energy-efficient escalators and lifts.

## **NATURE TOURISM**

### **Experiencing the Mighty Mekong through the Mekong Discovery Trail<sup>13</sup>**

The Mekong is a major river in Southeast Asia that is shared between several Southeast Asian countries, Burma (Myanmar), Laos PDR, Thailand, Cambodia and Vietnam. It provides millions with a source of livelihood and income while also being an area with high biodiversity. In Cambodia, the Mekong Discovery Trail (MDT) is a low-impact way of exploring the vastness of the Mekong region in an environmentally sustainable manner. The MDT is a network of safe, ecotourism journeys through some of the most natural and least populated parts of the Mekong.

Ideal for both those looking for either solo or group travel, there are many options for sightseeing along the 180km bike trail. Travelers exploring the

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<sup>12</sup> <http://www.greenprospectsasia.com/content/setia-city-mall-malaysia%E2%80%99s-first-green-mark-gold-certified-mall>

<sup>13</sup> [http://www.tourismcambodia.com/travelguides/provinces/stung-treng/what-to-see/429\\_mekong-discovery-trail.htm](http://www.tourismcambodia.com/travelguides/provinces/stung-treng/what-to-see/429_mekong-discovery-trail.htm)

MDT can choose to do the whole 180km or just certain parts. The MDT runs between Kratie and the Cambodian/Laos border.



*Irrawaddy dolphin sighting*

Many tourists come to try and see the critically endangered Mekong River Dolphins. The animals are found in very small numbers in the wild, so ecotourism options that do not disturb their river habitat can help protect this unique river dolphin species. There are opportunities to trek through fringing forests along the riverbanks.

Other low-carbon and low-emission ways of exploring the Mekong on the MDT include a traditional horse cart and houseboat experience, which allows tourists to admire the French colonial architecture of the riverside town of Kratie. The traditional riverboats explore unique ecosystems like the flooded forests of the Ramsar wetlands.

Thrill-seekers like mountain bikers can also travel along parts of the Mekong. Many choose to stay in guesthouses and home stays in rural villages along the way, allowing them to sample the local cuisine.

## CULTURE TOURISM

### **Community-based tourism in the Lao People's Democratic Republic<sup>14</sup>**

Community-Based Tourism is popular in the Lao People's Democratic Republic (Lao PDR). Tourists to different parts of Lao PDR can stay a few days or a week in a local village and experience traditional life in different parts of the country. Tourists stay in wooden houses and learn some handicraft making techniques like pottery and weaving.



As a result of the community-based efforts, handicraft traditions and skills are preserved and young people are involved in the processes, which is especially important in some areas traditional skills are slowly being lost. In the Phou Khao Khouay National Protected Area, The National Tourism

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<sup>14</sup> [http://www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Sectoral\\_Information/Service\\_Exports/Tourism/Linking%20the%20Handicraft%20Sector%20reprint%209%2010%202012%20for%20web.pdf](http://www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Sectoral_Information/Service_Exports/Tourism/Linking%20the%20Handicraft%20Sector%20reprint%209%2010%202012%20for%20web.pdf) and <http://www.trekkingcentrallaos.com/html/ecotourism.html>

Administration of Lao PDR, the management of Phou Khao Khouay and DED (German Development Service) worked closely together to develop sustainable tourism efforts in the national nature reserve.

Local community members were involved in all aspects of the decision making in the development process of ecotourism efforts in the area. This participation in the entire development process built a sense of ownership and is essential for sustainability of the project's objectives.



Some of the sights in the Phou Khao Khouay National Protected Area include The Twin Water Falls of Tad Xay and Pha Xay. The most popular destination in the part is Tad Leuk, a waterfall within the Nam Leuk, one of the three major rivers of the reserve. Bat Hatkhai is a small village just outside the reserve where one can have an authentic village experience with a homestay arrangement. The areas serve as jump off points for trekking and exploring the unique area. The village of Ban Na on the outside of Phou Khao Khouay even offers an opportunity to watch wild elephants from an observation tower.

Community-based tourism has the potential to improve the livelihood of communities surrounding natural areas, as well as contribute to the conservation of nature. Eco-tourism in the area aims to allow tourists to experience the unique ecology of the forest and make local community members partners in conservation. The combination of ecotourism with community-based tourism can help lead to sustainable development for the community and the environment.

## CRUISE TOURISM

### **Tauck's Eco-friendly Southeast Asian cruise<sup>15</sup>**



The Tauck company of cruising ships now offers an opportunity to take a “green” or eco-friendly cruise around several countries and their tourist points of interest. Tauck offers a 16-day land and sea exploration of Vietnam, Singapore and Hong Kong. The 11-day cruise is aboard a new luxury small ship, Le Soléal, which has a capacity of 264 passengers.

The Tauck company, in particular Le Soléal and its sister ships have been designed with technologies that try to minimize their impact on the environment. Some examples of the ship’s design include a navigational

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<sup>15</sup> <http://www.breakingtravelnews.com/news/article/taucks-treasures-of-southeast-asia-cruise-to-sail-aboard-new-ship/>

<http://www.tauck.com/media/press/Taucks%20Treasures%20of%20Southeast%20Asia%20Cruise%20To%20Sail%20Aboard%20New%20Luxury%20Ship%20Le%20Soleal.aspx>

<http://www.tauck.com/ships/LeSoleal.aspx>



positioning system that protects the sea bed by eliminating the need to drop anchor. This allows for safeguards against potential damage to the rich sea life in the Southeast Asian region. The ship also has wastewater and solid waste processing systems to manage its waste effectively and thus also keeps the water from warming due to waste. To add to its protection of the ecosystem and the diversity in the oceans, the ship is also equipped with detection system to help avoid collisions with whales and other cetaceans.

The cruise tour called “Treasures of Southeast Asia” explores Hong with guided sightseeing and it will conclude with a two-night stay in Singapore with accommodations at the Marina Bay Sands. Guests will also cruise aboard the ship in various ports of call in Vietnam including Hai Phong, Da Nang, Hoi An, Nha Trang and Ho Chi Minh City (Saigon).

In Vietnam, guests will be able to explore the city of Hanoi, sail around Ha Long Bay aboard a traditional junk. The UNESCO World Heritage Site, My Son, is also on the itinerary. Guests will also tour the Cao Dai Temple in Da Nang, experience daily life at a Vietnamese school and a local farmer’s home, and explore Ho Chi Minh City. In Singapore, guests will receive a taste of the many cultures through guided tours of Chinatown Little India and Little Arabia neighborhood.

The eco-friendly practices of the Tauck company and its ships ensure that while enjoying these historic and cultural sights, less impact is made to the coastal and marine ecosystems that the boat and its valued guests ply through.

## MARINE TOURISM

### **Save the Climate, Save Boracay, Philippines<sup>16</sup>**

This is a project of the Department of Tourism in partnership with Greenpeace Southeast Asia. This project aims to encourage the tourists to practice environment-friendly behaviors in the island with three simple acts: save energy, reduce waste and walk more. The said project was based on a manifesto signed by Boracay tourism industry stakeholders wherein they agreed to help with promoting energy efficiency and use of renewable energy which both contribute to climate change mitigation.



### **Green Fins<sup>17</sup>**

The Southeast Asian region is a global hub for biodiversity, and is a host to many unique species found nowhere else in the world. The Coral Triangle near the Philippines is considered by many to be the center of the center of marine biodiversity. Coral reefs are also called the ocean's rainforests and are host to different forms of interesting, colorful and unique species of fish, nudibranches, crustaceans and other organisms.

Dive centers are found all over the region. In an effort to encourage the reduction of negative environmental impacts to these special and delicate ecosystems, a network of dive centers and snorkel operators was established.

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<sup>16</sup> <http://www.greenpeace.org/seasia/ph/News/news-stories/save-the-climate-save-boracay/>

<sup>17</sup> [http://www.greenfins.net/green\\_fins-1.aspx](http://www.greenfins.net/green_fins-1.aspx)

Green Fins is a comprehensive programme that encourages dive centres and snorkel operators to work together to reduce their environmental impacts on coral reefs. Maintaining the health of coral reefs and the marine ecosystem contribute to their capacity to provide ecosystem services that may guarantee resilience against natural hazards.



Green Fins creates a regional network of dive centers which partner with local and national governments and communities to address local environmental threats and unsustainable tourism practices. These efforts contribute to ecosystem services, protect livelihoods and contribute to food security.

The Green Fins network can be found in Indonesia, Malaysia, the Philippines and Thailand in sites such as Sipidan, Mabula and Kapaalai in Malaysia, and Puerto Galera in Oriental Mindoro, Anilao in Batangas, Moalboal on Cebu Mactan Island, El Nido in Palawan and Malapascua in Cebu—famous for species found nowhere else such as the Thresher Shark.

## FOOD

### **Sampran Riverside Organic Farm Tour, Thailand<sup>18</sup>**



Adopting a diet that is rich in vegetables, fruits and other plant products and less meat and animal products is one way to have a healthy lifestyle, as well as a low-carbon option. Agricultural emissions from farming activities such as livestock and cattle raising are significant contributors to global warming because of greenhouse gas emissions. Often, land and forests are cleared for room for animals to graze and grow and require large volumes of other crops to feed them and the growing global population's increase in meat consumption.

Shifting to a more plant-based diet also addresses energy and water issues. In a 2009 Californian study comparing the environmental effects of vegetarian versus non-vegetarian diets, the researchers sought to answer whether animal consumption creates a heavier footprint than a vegetarian

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<sup>18</sup> World Health Organization (2000). Turning the Tide of Malnutrition: Responding to the challenge of the 21st Century. World Health Organization: Geneva.; Diet and the environment: does what you eat matter? Marlow HJ, Hayes WK, Soret S, Carter RL, Schwab ER, Sabaté J. Am J Clin Nutr. 2009 May;89(5): 1699S-1703S. Epub 2009 Apr 1.; <http://www.sampranriverside.com/activities/thailand-organicfarm-tour/>

diet. Researchers found that a non-vegetarian diet consumed 2.9 times more water,<sup>1</sup> 2.5 times more primary energy, 13 times more fertilizer, and 1.4 times more pesticide than a vegetarian diet.<sup>2</sup>

In Southeast Asia, more and more vegetarian restaurants are opening in urban cities. In rural areas, some organic farms open their doors for organic farm tourism. An example in Thailand is the Sampran Riverside Organic Farm Tour which is a 10-acre organic farm where vegetables, herbs and fruits are grown. Visitors can take a short traditional boat ride to visit the farm to sample fresh organic vegetables and fruits in season, try our homemade herbal teas and experience the livelihood of Thai farmers. They can purchase fresh vegetables and herbs at the farm. The Organic Farm project is in collaboration with the experienced local farmers of Nakhon Pathom who would like to either continue or return back to traditional agriculture practices and come together with the common goal to promote and create awareness on organic farming methods.

This organic farm tour is an example of responsible tourism which is both educational, enjoyable and environmentally-friendly.

### **Climate-Smart Seaweed Farming, Philippines**

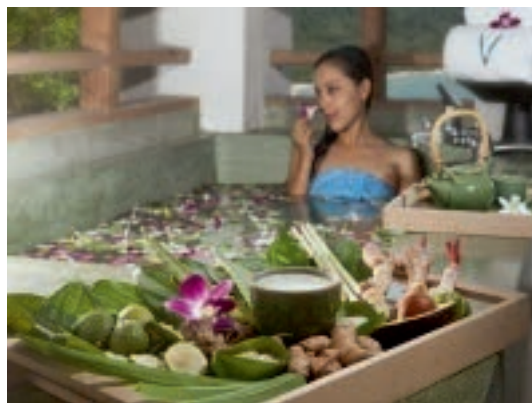
Seaweed farming is a climate-smart is an initiative for food security and climate change adaptation and mitigation. It is said that seaweed farming could help mitigate GHGs while also augmenting incomes, providing dietary protein and offering sustainable biofuels. Unlike other crops, seaweed farming will not need fertilizers, forest clearing or use of fuel. Such practices often draw the attention of experience tourists and development workers.

## MEDICAL TOURISM

### **V Integrated Wellness Resort, Malaysia<sup>19</sup>**

Asia has long been a top tourist destination for many travelers who come to enjoy the rich culture, biodiversity and nature, and sightseeing and other activities that make the region unique. In recent years, medical tourism has also been another top draw for many international travelers.

Medical tourism in Asia is well-known to international tourists because of the availability of excellent healthcare centers and hospitals, highly qualified and internationally accredited doctors, nurses and staff. Considerably low costs of medical treatments and procedure in comparison to their home country prices also draws in tourists and makes medical tourism a steadily growing industry. In Southeast Asia, medical tourism is becoming more popular.



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<sup>19</sup> <http://www.southeastasiawanders.com/medical-tourism-in-asia/> and <http://vintegratedwellness.com/>

There are many compelling reasons why people the world over are seeking medical attention abroad in hospitals and clinics. Also popular are the many health and wellness centers that allow for a holistic approach to health and give tourists peaceful and quiet retreat. Many combine their medical trips with extended holidays to enjoy the countries.

An example of an integrated relaxing holiday and medical tourism trip is at the V Integrated Wellness Resort in Malaysia. The V Wellness Resort is located in a stunning natural area in the coastal rainforest on Langkawi Island. The resort is conscious of its impact on the environment and strives to use organic and sustainable products in its offered packages to tourists. It has won numerous awards, including a 2011 and 2012 “Most Sustainable Hotel & Best Spa Hotel” from the International Hotel Awards in Association with HSBC Television. This form of medical and wellness tourism encourage biodiversity, decrease the urge to deforest and, thus, contribute indirectly to mitigation.

## FESTIVALS AND EVENTS

### **Pahiyas, Philippines<sup>20</sup>**



A unique festival event in the Philippines called “Pahiyas” celebrates agricultural harvest in a colorful fiesta of colors, local food and other celebrations. Held in the cultural heritage site of Lucban, the Pahiyas festival celebrates abundant harvest: homes try to outdo each other in creating colorful decorations for their houses. Most decorations are made from pounded rice paste called “kiping” molded on leaves. The festival promote the use of indigenous and natural materials and the means of preparing these materials for display are normally energy-efficient and with very little GhG emissions.

Farmers also show their bountiful produce as part of the colorful display. There are miniatures locally known as "anok"—these are fruits, vegetables and longganisa (local sausage) strung together also as ornaments.

Historically, the celebration is a form of thanksgiving for a bountiful harvest and in honor of the patron saint of farmers, San Isidro de Labrador.

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<sup>20</sup> <http://pahiyasfestival.com/home/>



A religious procession of the image of San Isidro is also held before the festival, and it is a local belief that the houses along the procession route will be blessed in the next year. It is from this belief that the lavish decoration of the home began.



Lucban also hosts an agro-industrial fair showcasing local products, which encourages local livelihoods and fewer food miles. The fair features native food like Lucban longganisa (sweet local sausage), rice-based desserts, ornamental plants like dapo and cutflowers and handicrafts such as woven hats and bags.

This celebration of local agriculture draws in thousands of tourists to enjoy native products and a colorful showcase of Filipino creativity.

## GAMING

### **ResortsWorld Sentosa, Singapore<sup>21</sup>**

ResortsWorld Sentosa is an integrated resort with hotels, attractions, casino and entertainment located in Singapore. As part of its Corporate Social Responsibility Program, RW Sentosa engages in projects that address environmental concerns.

RW Sentosa has several ways to be conscious of their environmental footprint. The structural design of RW Sentosa includes green, low-carbon and renewable energy practices such as solar technology, which gains it awards for its eco-friendly business practices such as the Solar Pioneer Award by the Singapore Economic Development Board and Energy Market Authority and Building and Construction Authority's (BCA's) Green Mark GoldPlus Award. In 2012, Universal Studios Singapore was also awarded the BCA's Green Mark GoldPlus Award.

Investing in renewable energies to meet establishments' own energy needs is one way to mitigate climate change as no fossil fuels are burned and thereby reduce emissions and carbon footprint. RW Sentosa also reduces its energy needs overall by investing in energy-efficient and smart cooling technologies.

Other technologies at RW Sentosa include:

- An eco-friendly cooling system at Universal Studios Singapore by using energy-air-conditioners which are kept at 24-25 C.
- Green roofs to reduce heat in buildings and air conditioning needs.

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<sup>21</sup> <http://www.rwsentosa.com/language/en-US/Homepage/CorporateSocialResponsibility>

- A rainwater catchment at Universal Studios Singapore that can take the capacity of 12 Olympic-sized swimming pools. The catchment is a lagoon attraction at the Universal Studios Park.

Water from the catchment is used for irrigation and some water attractions.

- Solar energy panels within the site to generate 550 megawatt hours of electricity annually. This reduces carbon emissions by 342 tonnes a year.

- Efficient shading canopy technology to cool the local climate of the park for tourists

Tree conservation is also practiced – rather than removing trees from the site, existing trees on the RW property construction site were relocated, and the timber from over 300 trees used in many infrastructural features of the area, including walkways, benches and other souvenirs in order to use the products wisely. Having more trees on-site contributes to the aesthetics of the attractions, but also provides air purification, habitat for birds and other organisms, and contributes to the ecosystem services. RW Sentosa also participates in global environmental campaigns such as Earth Hour and conducts outreach activities and nature walks.

## **HANDICRAFTS**

### **Creative travel: Handicraft Highway in Northern Thailand<sup>22</sup>**

The road that runs from Chiang Mai to San Kamphaeng in Northern Thailand is called the Handicraft Highway. The road is lined with numerous

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<sup>22</sup> <http://www.aseantourism.travel/articlecountry/detail/experience-along-the-handicraft-highway-in-northern-thailand#.UblLifYpb1s> and <http://www.tatnews.org/index.php/feature-articles/509-along-northern.html>

shops, small galleries and showrooms bursting of vivid colors and patterns. The Handicraft Highway is a living showcase of the region's creativity, skill and passion for handicraft making. These handicrafts include silk and silverware, lacquer ware, ceramics, umbrellas and fans. Visitors to the Northern Thailand region should not miss the opportunity to meet



the local craftsmen and women, artists and traditional handicraft makers to learn more about their amazing skills and perhaps pick up a memorable token to take home.

The quality of Thai silk is known throughout the world. The Handicraft Highway allows tourists to see the humble process of the transformation of the cocoon of silkworms into one of the finest fabrics in the world. Visitors can watch silk worms at different stages of growth, how the silk is collected and spun into thread, the silk dyeing process, and the labor-intensive process of weaving the fine silk into cloth, which is still done traditionally on wooden looms.

Another stop of the handicraft highway is the village of Bor Sang that is famous for its umbrella and fan handicrafts. From tiny toy umbrellas to giant ones that span several meters, only natural products are used in the making of umbrellas. The handle is made of wood and the spokes are made from bamboo. The paper umbrellas are made from the bark of a type of mulberry tree created by pounding of the bark of the tree into a pulp which is mixed in

water and laid out to dry on a fine mesh screen. Umbrellas and fans are usually painted by hand and can even be customized to order on the spot. Supporting the local livelihoods of the craftsmen and women who use indigenous and local natural materials is one way to support low-carbon and adaptive efforts in the region.

## CREATIVE TOURISM

### **Sabah International Folklore Festival and Sarawak Cultural Village, Malaysia<sup>23</sup>**



Music festivals in Southeast Asia are a unique experience for large crowds of music-loving tourists and locals alike. Some music festivals in these locales take place in natural settings and showcase local, traditional folk music, arts and dance as well as international acts.

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<sup>23</sup> <http://www.aseantourism.travel/articles/detail/jazzed-music-festivals-of-borneo-and-indonesia#.UcD0lfYpb1s>; <http://www.tourism.gov.my/en/my/Web-Page/Places/States-of-Malaysia/Sarawak/Sarawak-Cultural-Village>

The Sabah International Folklore Festival celebrates folk music from all over the world, wherein performances from Poland, Taiwan, Argentina and other countries come to perform in Malaysia to share their cultural heritage with the vibrant crowd. Another event, the Harvest Festival in May also showcases local music, local beauty pageants and world class rice wine – local products, innovations that use native ingredients and products promote supporting livelihoods and reduce transport miles for foreign products and goods to come into the country and , thus, contribute to climate mitigation.

Another interesting music festival on the international radar is the Rainforest World Music Festival that takes place at the Sarawak Cultural Village. The cultural village is sprawled across 17 acres with only about 150 residents. There are demonstrations of demonstrating traditional daily activities from Sarawak's diverse tribes like the processing of sago and the making of handicrafts. By bringing these cultural events to heritage and other natural sites, these areas become important for preservation and conservation.

## **ADVENTURE TRAVEL**

### **On a High at Dahilayan Adventure Park, Cagayan de Oro, Philippines<sup>24</sup>**

Launch yourself into a thrilling adventure at Dahilayan Adventure Park in Cagayan de Oro City in the Philippines. It boasts of the longest dual zipline in Asia at 840 meters with a jump off point at 4500 meters above sea level. The zipline goes through lush rainforest at a speed of 60-80 km per hour and promises of an adrenaline rush over beautiful scenery below.

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<sup>24</sup> [www.dahilayanadventurepark.com](http://www.dahilayanadventurepark.com)

Dahilayan Adventure Park also offers ropes course, a dropzone into a small man-made lake and a “flying lizard” – a pedal-powered bike glide through the forest.

The technologies for the adventures for tourists at the eco-friendly nature park are low-carbon and low-emission, as they only require safe and durable equipment like cables, ropes, carabiners and protective gear. The natural forces of gravity and manpower take care of the energy needs of the attractions, making these adventures available even in foggy or rainy weather. The peacefulness and beauty of the forest through which the zipline and other attractions traverse are left largely intact and undisturbed. This contributes to the biodiversity of the area and community, which can also be explored on horseback or on foot.

Dahilayan park is proof that adventure parks can work with the natural features of the ecosystems they are located in. Tourists are provided with a thrilling experience from the adventures offered by the tour operators while also enjoying the view of the forest.



## Malaysia's Gopeng Rainforest Resort<sup>25</sup>

Tourists looking for both adventure and tranquility in Malaysia may find themselves in Gopeng Rainforest. Gopeng Rainforest Resort promotes eco-adventure tourism in the natural area of the Ulu Geruntum and Ulu Kampar rivers in the Kinta Forest. The resort is surrounded by the highlands of Cameron Highlands and Gunung Cabang (Mount Cabang) near Gopeng of Perak in Malaysia.



Gopeng Rainforest Resort provides for accommodation, food, recreation and activities in the midst of environment surrounded by beautiful rainforests and orchards. The stylish local traditional Malay houses and chalets in Gopeng Rainforest Resort are built to blend in with the environment. This is an example of an adaptive measure, as these types of traditional structures allow for the entry of light and breezes for warm weather. The traditional “chalets” are also at a height that high above the ground to avoid potential flood hazards and to allow air to flow through.

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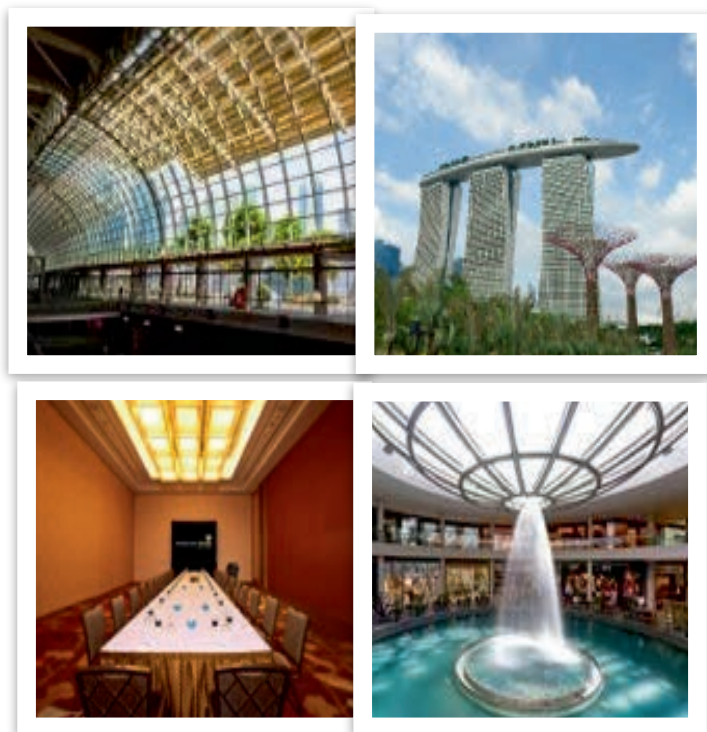
<sup>25</sup> <http://www.gopengrainforest.com/> and <http://greenselipar.com/2008/12/12/gopeng-rainforest-resort-a-traveler-and-nature-friendly-family-guesthouse/>



Tourists at the resort can opt for various low-carbon and low-impact activities like white water rafting, exploring caves and the forests in the area. These activities use the natural features of the area, and thus keeping them in good condition is important for the stakeholders in the area. The world's largest flower, the rafflesia, can also be found in the forest. The Gopeng Rainforest Resort also grows its own fruits for guests in its orchard, providing fresh fruits with minimal travel emissions. The lodge has its own wastewater treatment on site, and their outdoor furniture is made from recycled materials. Fees charged by the lodge for guided tours are contributed to a local NGO that engages in forest protection and conservation.

## MEETINGS, INCENTIVES, CONFERENCES, EXHIBITIONS

### **Marina Bay Sands Expo and Convention Center<sup>26</sup>**



For business-related travel, including meetings, conventions and exhibitions, the Marina Sands Expo and Convention Center is Singapore's largest and most flexible exhibition and meeting venue. Marina Bay Sands is committed to environmental leadership as part of their Sands ECO360 Sustainable Development program. Customers are offered environmentally preferable options to reduce the environmental impact and carbon footprint of their events. Planners, for instance, can request whiteboards instead of flipcharts, and water dispensers instead of bottled water.

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<sup>26</sup> <http://www.marinabaysands.com/Singapore-Conventions/Green-Meetings/> and <http://www.marinabaysands.com/Company-Information/Environmental-Sustainability/>

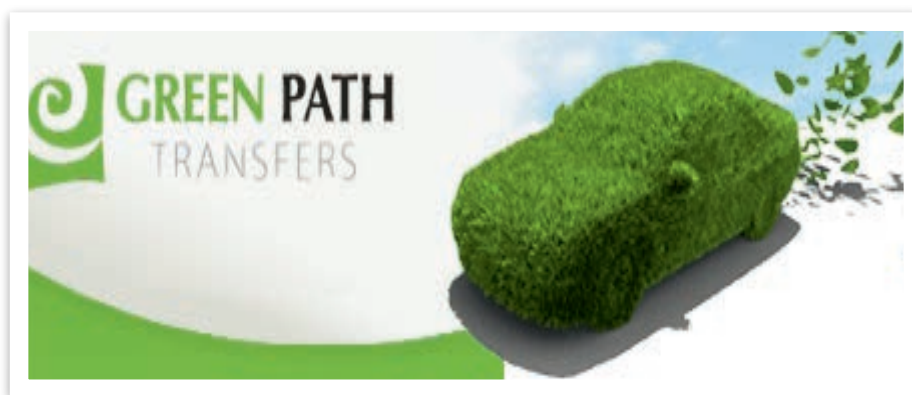
The top-performance facilities at the Marina Bay Sands are mindful of the realities of the energy and water needs hosting large conventions. The convention center itself is partly built with recycled materials and products and features energy-efficient lighting, water-efficient fixtures, and a S\$25 million Intelligent Building Management System to control the level of energy usage. Water efficiency measures include rainwater harvesting and low-flow water taps. The Marina Bay Sands uses equipment scheduling for energy conservation, paper reduction programs and recycling bins are found throughout the whole center. A subway station is located directly underneath Marina Bay Sands to promote the use of public transport to and from the convention center.

For its efforts in environmentally sound practices, the Building Construction Authority (BCA) of Singapore has awarded the Marina Bay Sands with its Green Mark Gold Certification. The convention center itself is part of the Marina Bay Sands Resort which draws tourists for the shopping mall, museum, theaters, and other tourist attractions.

## **BUSINESS**

### **Green Path Transfers: 100% carbon offset<sup>27</sup>**

Green Path Transfers is a global provider of airport, inter-city and inter-island transportation services. Green Path Transfers operates globally, and in key areas in the Southeast Asian countries of Viet Nam, Singapore, Malaysia, Brunei, the Philippines and Thailand.



The goal of the company is to use low carbon emission vehicles to reduce the carbon footprint of travelers availing of their services. In the case that the carbon footprint cannot be reduced completely, the company offsets 100% of the emissions. The company chooses vehicles that operate on environmentally friendly options such as hybrid cars, electric vehicles or those that use bio-fuels. These low- to zero- carbon actions contribute to mitigation efforts as they reduce the amount of greenhouse gases released into the atmosphere from the usage of fossil fuels. Green Path Transfers aims to:

- Provide incentives (financial and otherwise) to all partners to begin switching their fleet over lower carbon options

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<sup>27</sup> <http://www.greenpathtransfers.com/>

- Promote low carbon options within the Green Path Transfers network.
- Displaying innovations in green living, with a special emphasis on transportation.
- Build affiliations with groups globally involved in responsible and sustainable travel.
- Work with carbon offset partners (such as Blue Ventures Carbon Offsets and Atmosfair) to try and support innovations in low carbon transport
- Work with WHL travel and other WHL Group companies to make all operations of the company carbon neutral by both minimizing their own carbon footprint and offsetting unavoidable emissions.
- Have a majority (>50%) of Green Path Transfer Partners globally using low carbon emission vehicles by 2020.

Other examples of current ASEAN tourism initiatives, specific to tourism market segments, that may contribute to mitigation and adaptation are found in Table 3 below:

Table 3. ASEAN Tourism Target Market Segments and Sample CC Interventions per Segment.

Generic and mass travel	Experiential Travel	Creative Travel	Adventure Travel	Extended, long stay travel	Business-related travel
				<b>Housing</b>	
				Chi Phat	
				Cambodia	
				guesthouses and homestays	
				Replace inefficient illumination to LEDs; Shift type of refrigerant of ACS;	<b>Meetings</b>
<b>Sightseeing</b>			<b>Extreme tourism</b>	Replace ACs using inverter driven systems; Solar water heaters <sup>2</sup>	
Singapore					
Walking Tours					
	<b>Health tourism</b>	<b>Museums</b>			
	Health and Wellness tourism	Climate change and cultural heritage (SEAMEO-SPAFA) <sup>1</sup>			
	Philippines				

<sup>1</sup> Kettle, Kevin Charles, Southeast Asian Collections in Peril: Managing Risks from Climate Change (CollAsia Panel) Museums and their Roles in Engaging the Youth for Conserving Heritage from Climate Change [http://www.maltwood.uvic.ca/cam/publications/conference\\_publications/Kettle.pdf](http://www.maltwood.uvic.ca/cam/publications/conference_publications/Kettle.pdf)

<sup>2</sup> UNWTO, Practical Solutions on Climate Change and Tourism – the STREAM Project, ITB Berlin Convention, 6 March 2013, [http://www.itb-kongress.de/media/global/global\\_image/global\\_apps/global\\_edb/global\\_edb\\_upload\\_2013/global\\_edb\\_events\\_itbk\\_1/edb\\_261695.pdf](http://www.itb-kongress.de/media/global/global_image/global_apps/global_edb/global_edb_upload_2013/global_edb_events_itbk_1/edb_261695.pdf)

Generic and mass travel	Experiential Travel	Creative Travel	Adventure Travel	Extended, long stay travel	Business-related travel
<b>Food</b> Bangkok Streetfood Tours	<b>Spas</b> Indonesia's Traditional Spa Tourism	<b>Art galleries</b>	<b>Adventure tourism</b> Danum Valley Canopy Walk, Malaysia Ulu Temburong Canopy Walk Brunei	<b>Food</b>	<b>Incentives</b>
<b>Shopping</b> Open Night Markets (Bangkok, Malaysia, Singapore)	<b>Culinary tourism</b> Culinary tours in Vietnam, Cambodia, Thailand, Laos, Myanmar (ie Tea Party in a monastery, Bagan)	<b>Festivals</b> Philippine street festivals	<b>Community-based tourism</b> Cambodia charity cycle challenge <b>Eco-tourism:</b> storm shelter for fishing villagers and tourists within limestone walls of caves; (Cua Van Village, Hung Thang	<b>Insurance</b>	<b>Conventions</b> Singapore Marina Sands Bay

Generic and mass travel	Experiential Travel	Creative Travel	Adventure Travel	Extended, long stay travel	Business-related travel
			Commune, Ha Long City, Quang Ninh Province)		
<b>Visiting family</b>	<b>Community-based tourism</b>	<b>Music</b>	<b>Gap year tourism</b>	<b>Car rentals</b>	<b>Exhibitions</b>
Low-carbon family adventure packages	Conservation –focused tour in Sukau, Malaysia Garden house tours, Hue Vietnam	Outdoor concerts and music tours (Southeast Asia)	Clay eco-lodge construction volunteer, Laos Habitat restoration Borneo volunteering project	Carbon offsets in two week tours in Cambodia <sup>3</sup>	
<b>Entertainment</b>	<b>Ecotourism</b>	<b>Handicraft</b>		Hanoi-Siem Reap Cycle tours	
Indigenous outdoor	Solar Powered Lodges in	Handicraft and furniture			<b>Maids and drivers</b>

<sup>3</sup> Ruiz, Rebecca, Top Spots for Southeast Asian Eco-tourism, [http://www.forbes.com/2008/03/10/travel-eco-asia-forbeslife-cx\\_rr\\_0310travel.html](http://www.forbes.com/2008/03/10/travel-eco-asia-forbeslife-cx_rr_0310travel.html)



Generic and mass travel	Experiential Travel	Creative Travel	Adventure Travel	Extended, long stay travel	Business-related travel
games	Sumatra, Indonesia				
	Boat-landing guest houses in Laos				
<b>Urban experiences</b>	<b>Volunteer tourism</b>				
Sustainable urban tourism (Changmai and Hue) <sup>4</sup>	Volunteer vacation programs				
Development of the Jurong Lake District in Singapore	<b>Marine-based tourism</b>	<b>Performing arts</b>		<b>Health care</b>	
	Mangrove and Coral restoration				

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<sup>4</sup> <http://sutourism.wordpress.com/2012/03/13/tourism-activities-and-ghg-emission-reduction-approaches-by-creating-decent-jobs-in-chiang-mai-and-hue/>



**FRAMEWORK:**  
**MAINSTREAMING CLIMATE**  
**CHANGE MITIGATION AND**  
**ADAPTATION IN ASEAN'S**  
**MEASURES FOR TRAVEL AND**  
**TOURISM COMPETITIVENESS**

The Special Report of the Intergovernmental Panel on Climate Change (IPCC) on Managing Climate Extremes explains how climate change impacts on development goals (see image below). Applying it to travel and tourism in the ASEAN, there is a growing consciousness that travel and tourism elements may contribute to greenhouse gas emissions that may cause anthropogenic climate change and natural climate variability that further create weather and climate events that have the potential of becoming hazards.

The latter, when interacting with vulnerability and exposure of people, infrastructure and other essential systems in the travel and tourism sector, may cause disaster risk that will in turn impact on developments in the travel and tourism sector. To address the issue of climate change in tourism, this document takes inspiration from the ASEAN commitments laid out in the ASEAN Socio-cultural Community Blueprint published in 2009.

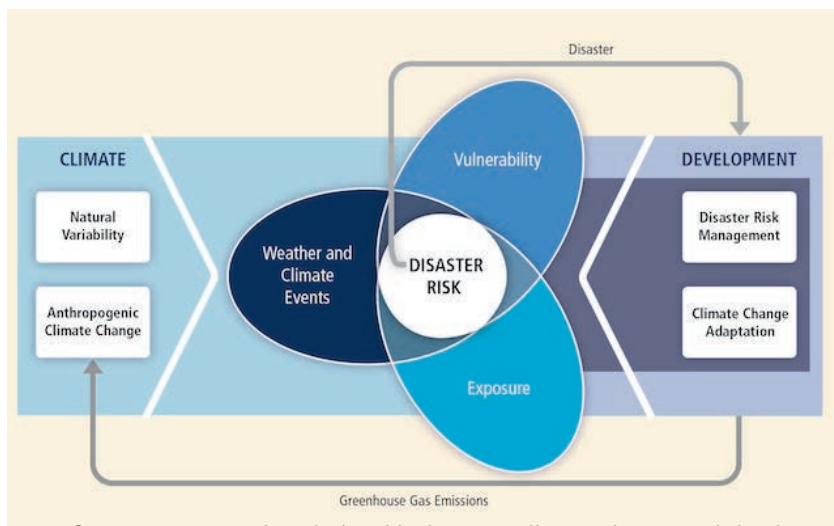


Figure 4. Core concepts on the relationship between climate change and development from the IPCC Special Report on Managing Climate Extremes

Consistent with the recommendations made by the IPCC, the ASEAN Socio-cultural Community Blueprint affirms the need to mitigate (contribute to the reduction of GhG emissions through low-carbon approaches) and the development of adaptive capacities to allow ASEAN to address climate change challenges. Following the ASEAN Blueprint, these strategies have to be accompanied by a deeper understanding of climate change through scientific research and development, technology transfer, information sharing particularly on best practices. Furthermore, human resources development and multi-stakeholder participation on ways to address climate change will have to be encouraged.

In the context of travel and tourism in the ASEAN, while recognizing that there are sectors within the current practice that

still contribute to GhG emissions, there is a commitment to mitigate, enable adaptive capacities and even raise awareness and preparedness on the impacts of climate change. Mainstreaming climate change in the Travel and Tourism Competitiveness Index that ASEAN adopted and is currently using, climate change can be mainstreamed in its regulatory framework, business environment and infrastructure, in the way it nurtures in human, natural and cultural resources to ensure the competitiveness of ASEAN's target market segments, namely, generic and mass travel, experiential travel, creative travel, adventure travel, extended and long stay travel and business related travel (see figure below)

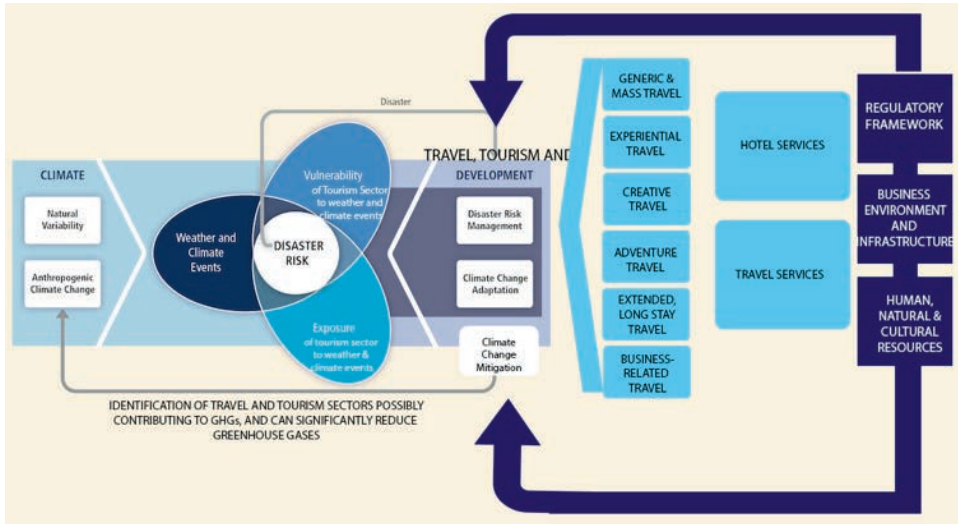


Figure 5. Mainstreaming of Climate Change Mitigation and Adaptation in the Travel and Tourism Competitiveness Index and Target Market Segments currently used by the ASEAN.

Adapted from IPCC's Core Concept on the relationship between climate change and development and the ASEAN Tourism Strategic Plan 2011-2015, ASEAN Tourism Marketing Strategy 2012-2015, and the ASEAN Travel and Tourism Competitiveness Report 2012.



**POSSIBLE CLIMATE CHANGE-**  
**RELATED APPROACHES AND**  
**MEASURES IN TOURISM**  
**FOR THE ASEAN**



Integration and mainstreaming climate change mitigation and adaptation in ASEAN's current measures for travel and tourism can be done through the several measures that build on existing development and climate change initiatives within the ASEAN and existing standards already developed in travel and tourism currently used in the region. Among the approaches that can be applied in ASEAN travel and tourism are the following:

1. Evidence-based and Climate-smart Tourism Planning on Climate Change Adaptation and Mitigation
  - Develop an emissions baseline data set
  - Vulnerability assessment examining ecosystems-based and context-specific hazards, exposure, sensitivity, coping and adaptive capacities to current and future climate-related hazards
2. Integrating or mainstreaming climate change approaches in existing competitiveness indexes or standards in applied in ASEAN tourism
3. Preparation of contingency plans for specific natural hazards
4. Reducing the vulnerability of travel and tourism infrastructure, operations, services to natural hazards by enhancing their respective adaptive capacities
5. Carbon Neutral Tourism Corridors in Transport and Accommodations
  - Low-carbon tourism zones

- Increasing forest cover along trade and transport routes (ie North-South Corridor of China, Laos, Myanmar, Thailand and Vietnam); East-West Corridor (ie Laos, Myanmar, Thailand and Vietnam and Southern Corridor of Cambodia, Thailand and Vietnam)
6. Ecosystem-based adaptation sustainable and resilient-tourism

Using the measures in the the ASEAN Travel and Tourism Competitiveness Report 2012, the following are examples of how climate change adaptation and mitigation measures can be mainstreamed or integrated in currently used ASEAN set of standards . Table 3 below utilized the same elements measured by the Travel and Tourism Competitiveness Index

and gives examples on how the climate change can mainstreamed in the current variables being measured by the said Index. Table 4, on the other hand, gives an example on how climate change can be integrated in the ASEAN Common Competency Standard for Tourism Professionals (ACCSTP). The line items in each category in the table may be added onto the existing standards already set. Table 5, however, shows examples on how climate change can be mainstreamed in the ACCSTP. Mainstreaming suggests that rather than creating new measures, we find ways of incorporating climate change in current measures that are in use. Table 6 shows how climate change can be integrated in the ASEAN Green Hotel Standards.



## Possible ways of Mainstreaming CC Measures in the the Travel and Tourism Competitiveness Index used by the ASEAN

Table 3. Examples of Mainstreaming CC in the ASEAN Travel and Tourism Competitiveness Index

<b>Sub- Index A: Regulatory Framework</b>	
<b>Elements</b>	<b>Possible CC Measures</b>
Policy rules and regulations	Number and extent to which tourism policies encourage mitigation and adaptation actions contributing to sustainable development
Environmental sustainability	Measures number and extent of policies encouraging ecosystem-based approaches to mitigation and adaptation
Safety and security	Considers climate security policies in tourism that promote resilience and disaster prevention
Health and hygiene	Extent by which policies that seek to prevent climate-related vector borne diseases are used and supported in the travel and tourism sector
Prioritization of Travel and Tourism	Extent to which climate change mitigation and adaptation in the travel and tourism sector are given priority in regional and policies and budgets
<b>Sub-Index B: Business Environment and Infrastructure</b>	
<b>Elements</b>	<b>Possible CC Measures</b>
Air transport and infrastructure	Quantity and quality of measures to ensure that air transport infrastructure contributes to climate change mitigation and climate resilience
Ground transport infrastructure	Quantity and quality of low-carbon ground infrastructure that also contributes to mobility in times of hazards

Tourism infrastructure	Quantity and quality of tourism infrastructure (ie hotel rooms, rest and recreation facilities, communication and banking facilities) that contributes to the enhancement of ecosystem-based services, that are low-carbon, and that enhances resilience to current and future hazards.
ICT infrastructure	Number and type of initiatives that encourage uptake of information and communication technologies useful for travel and tourism and contribute to climate change mitigation and adaptation
Price competitiveness in the T and T industry	Measures the costliness of low-carbon travel to energy efficient and resilient destinations
<b>Sub-index C: Travel and Tourism human, cultural and natural resources</b>	
<b>Elements</b>	<b>Possible CC Measures</b>
Human resources	Examines the extent to which climate change adaptation and mitigation training and education are made available to tourism personnel
Affinity for Travel and tourism	Measures by which a country and society are open to mitigation and adaptation in tourism and engages foreign visitors to enjoy travel and tourism activities while contributing to the reduction of GhG emissions and enhancing or contributing to coping and adaptive measures
Natural Resources	Quantity and quality of measures in travel and tourism contributing to the enhancement of eco-system services and sustainable development
Cultural resources	Assesses the quality of a country's cultural heritage and richness that may contribute to climate change mitigation and adaptation while encouraging travel and tourism

## **Possible ways of Integrating CC Measures in the in the ASEAN Common Competency Standard for Tourism Professionals (ACCSTP) : Examples**

Table 4. Examples of Integrating Climate Change in the ASEAN Common Competency Standard for Tourism

<b>DIVISION</b>	1	2	3	4	5
	Very unsatisfactory	Unsatisfactory	Satisfactory	Very Satisfactory	Excellent
HOTEL SERVICES (Front Office and Housekeeping)					
COMMON CORE COMPETENCIES					
Basic knowledge on how tourism front office or housekeeping operations can help reduce carbon or ghg emissions.					
Basic knowledge on how to contribute to business continuity in times of natural hazards					
HOTEL FRONT OFFICE					
Can explain energy-efficient and/or low carbon practices of the hotel.					
Can explain the contingency plan of the hotel to guests in case of emergencies due to natural hazards.					

HOUSEKEEPING SERVICES					
Uses cleaning products that do not contribute to ghg or carbon emissions.					
Knows how to insulate rooms in case of hazards such as rain or cold weather and to ventilate rooms in case of heat.					
SECURITY SERVICES					
Knowledge of the hotel's contingency plan for natural hazards					
Secures the lights and other electrical devices are turned off when facilities are not in use for specific functions or vital hotel operations					
CUSTOMER SERVICE, SALES AND MARKETING					
Can prepare a marketing pitch on the energy-efficient, low-carbon and/or resilient features of the hotel services.					
GENERAL ADMINISTRATION					
Develops and designs measures to reduce energy consumption or lower carbon emissions.					
Leads a team in the development of a design for reducing the vulnerabilities of hotel infrastructure, services and operations to natural hazards.					
FINANCIAL ADMINISTRATION					

Secures that resources are allocated and utilized appropriately for low-carbon measures and contingency plans for business continuity.					
HUMAN RESOURCE DEVELOPMENT					
Provides capacity building on climate change adaptation and mitigation to hotel personnel.					
RESOURCE MANAGEMENT					
Develops and designs measures for energy efficient and low-carbon operations.					
HOTEL SERVICES (RESTAURANT SERVICES)					
COMMON CORE					
Knowledge of cooking ingredients, menu, ways of cooking that are low in carbon and ghg emissions.					
COMMERCIAL COOKERY					
Knowledge of sustainable sources of ingredients that are produced from resilient production processes to guarantee the steady supply of ingredients.					
COMMERCIAL CATERING					
Develop energy-efficient ways of food presentation					
PATISSERIE					

Source ingredients from sustainable sources and can prepare products in an energy-efficient manner					
FOOD AND BEVERAGE SERVICE					
TRAVEL SERVICES					
TRAVEL AGENCY TICKETING					
Can suggest proximate travel destinations involving one major destination and adjacent micro-destinations to cut on travel demand					
TOUR GUIDE SERVICES					
Knowledge of tourism facilities and destinations with climate change mitigation and adaptation practices					
TOUR OPERATIONS					
Provide alternatives for low carbon or energy-efficient transport.					
CUSTOMER SERVICE, SALES AND MARKETING					
Develop and prepare a sales pitch on the value of tourism climate mitigation and adaptation practices within the tourism sector.					
GENERAL ADMINISTRATION					
Develops travel contingency plans for natural hazards.					

Develop and design energy-efficient measures for travelling.					
HUMAN RESOURCE DEVELOPMENT					
Provides capacity building to tour operators on how to reduce the vulnerability of their operations to climate-related hazards.					
RESOURCE MANAGEMENT					
Secures and develops measures to ensure that tour operations save on energy by looking for a mix between motorized and non-motorized transport operations					

## **Possible ways of Mainstreaming CC Measures in the in the ASEAN Common Competency Standard for Tourism Professionals (ACCSTP) : Examples**

Table 5. Examples of How to Mainstream Climate Change in the ASEAN Common Competency Standard for Tourism

<b>DIVISION</b>	1	2	3	4	5
	Very unsatisfactory	Unsatisfactory	Satisfactory	Very Satisfactory	Excellent
HOTEL SERVICES (Front Office and Housekeeping)					
COMMON CORE COMPETENCIES					
Contributes to the climate change mitigation and adaptation practices while working with colleagues and customers					
Implements environment-friendly occupational health, workplace hygiene and safety procedures					
Knows how to integrate mitigation and adaptation practices in the promotion of hospitality products and services					
Develops and updates knowledge on climate change adaptation and mitigation					
Promote and use first aid materials and procedures that do not contribute to greater GHG emissions					



HOTEL FRONT OFFICE					
While receiving and processing reservations, briefly explains climate change and mitigation practices of hotels					
Provide information about in-house services that contribute to mitigation and adaptation					
Where available, provide the guests with options for accommodation services that are less exposed to natural hazards , that contribute less to carbon emissions (ie Non-air-conditioned rooms) or that contribute to adaptation (ie use of lighter blankets instead of comforters.					
Options for non-motorized porter services					
HOUSEKEEPING SERVICES					
Promote and use of housekeeping equipment and materials that are environment-friendly and energy efficient					
Cleans and prepare rooms, launder linen and guest clothes and clean public areas, facilities and equipment using energy efficient and environment-friendly products					
SECURITY SERVICES					
Ensure that lights and other equipment in unused room, unless required to be on for security purposes, are turned off.					

Ensure that no guest or hotel employee are exposed to natural hazards particularly when within the hotel premises					
Contingency plan for evacuation of people and assets in case a hazard strikes					
CUSTOMER SERVICE, SALES AND MARKETING					
Suggest low-carbon events organizing					
Gives options for events planning and organizing that are less exposed to hazards					
Develops with the client a risk management plan for events being booked at the hotel					
Develops a marketing strategy that gives low-carbon options (ie non-aircon venue, lightning choice, non-motorized transport,) and low-risk options to clients					
GENERAL ADMINISTRATION					
Plan and establish low-carbon systems and procedures					
Plan and establish risk management systems against natural hazards					
Maintain a paper-less filing and retrieval system					
Develop and present climate-sensitive product information					
Plan, manage and conduct meetings in venues that are low-risk to natural hazards and in energy-efficient facilities					

Knows energy-efficient means of designing, preparing, presenting various reports					
Develops redundant data management and logistic systems					
Receive, secure, monitor, control stocks and goods in climate-resilient facilities					
Develop, manage and implement climate-resilient projects					
FINANCIAL ADMINISTRATION					
Conduct energy-efficient and paperless financial transaction processes					
HUMAN RESOURCE DEVELOPMENT					
Develop, plan and conduct performance assessment procedures that incorporate practices encouraging climate resilience and mitigation					
Conduct a paperless training needs assessment					
Develop a training needs assessment that assesses level and quality of knowledge, behaviour and skills on climate mitigation and resilience					
Coach others on how to manage job-related risks from natural hazards and how to do execute work assignments in an energy efficient manner					
Plan, prepare, conduct, deliver training sessions that contribute to climate resilience and mitigation					

Develop an assessment tool to monitor and evaluate the effectiveness of CC-related trainings					
RESOURCE MANAGEMENT					
Manage and monitor workplace operations to ensure that they contribute to climate resilience and mitigation					
Manage quality of environment-friendly customer/ guest services					
Manage climate-related special events					
Manage physical assets, infrastructure, stock purchases, inventories, computer systems and network to ensure that they are climate –resilient and are energy efficient					
Ensure compliance of the business to environmental standards					
HOTEL SERVICES (RESTAURANT SERVICES)					
COMMON CORE					
Apply low-carbon standard safety procedures for handling foodstuffs					
Clean and maintain environment-friendly equipment and utensils					
Develop and update local knowledge on energy efficient, low-carbon, environment-friendly and climate-resilient food preparation and restaurant services					

Receive and store kitchen supplies and food stock in low-carbon, energy-efficient and climate-resilient facilities					
COMMERCIAL COOKERY					
Identify and prepare various meals in a low-carbon and energy efficient manner					
Organize climate-resilient food service operations					
Establish and maintain energy-efficient, low carbon, environment-friendly and climate resilient quality control food production and safe storage of prepared foods					
COMMERCIAL CATERING					
Design a concept for a major climate change event or function					
Design meals that meet specific dietary and cultural needs and are environment friendly					
Operate a climate-resilient and low-carbon fast food outlet					
PATISSERIE					
Manage and operate a climate-resilient, low-carbon, energy efficient coffee shop					
FOOD AND BEVERAGE SERVICE					
Develop and maintain food and beverage product knowledge that contribute to climate mitigation					

Provide, clean, tidy low-carbon and climate-resilient bar, food, beverage, and room services					
TRAVEL SERVICES					
TRAVEL AGENCY TICKETING					
Able to access and interpret product information that have value-added features on climate resilience and mitigation					
Book and coordinate supplier for non-motorize or energy-efficient services					
Construct and ticket energy efficient air travel and non-air travel plans					
Coordinate energy-efficient marketing and promotional activities					
Create and energy efficient promotional displays that are resilient to natural hazards					
Develop and update knowledge on local products and services that environment friendly and contribute to climate resilience.					
Maintain an inventory on energy-efficient, environment friendly and climate resilient product information					
Produce travel documentation on products and services addressing climate change					

Source and package tourism products and services contributing to climate change adaptation and mitigation					
Source and provide low-carbon, energy-efficient, climate-resilient destination information and advice					
TOUR GUIDE SERVICES					
Allocate tour resources to efficiently and in a manner that contributes to mitigation and enhances adaptive capacities of the services offered					
Coordinate and operate energy efficient and climate resilient day tours or short excursions					
Coordinate and day tours or short excursions to areas and communities that contribute to climate mitigation and resilience					
Demonstrate recognition, respect and knowledge of indigenous cultures that contribute to climate mitigation and resilience					
Develop and coordinate appropriate cultural tourism activities that contribute to climate mitigation and resilience					
TOUR OPERATIONS					
Allocate tour resources efficiently					

Ensure regular vehicle maintenance and repairs to ensure energy-efficient operations					
Develop and implement contingency operational plans					
Develop interpretive content for eco-tourism activities that contribute to climate mitigation and promote climate resilience of tour operations					
Know how to drive large tour buses or coaches in an energy-efficient manner					
Manage and execute a detailed, resilient, energy-efficient tour itinerary					
Manage climate-related operational risk					
Operate climate-resilient and energy-efficient tours in remote areas					
Plan and implement low-carbon package sales activities					
Provide environment-friendly and climate-resilient camp site catering					
CUSTOMER SERVICE, SALES AND MARKETING					
Assess and plan energy-efficient, low-carbon and climate-resilient tourism opportunities for local communities					
Compile and update tourism industry knowledge on climate change					



Construct and apply low-carbon, energy efficient, environment friendly tourism product research					
Coordinate low-carbon, climate resilient and energy-efficient marketing activities					
Coordinate the low-carbon, energy-efficient and environment-friendly production of brochures and marketing materials that are climate-resilient					
Develop and monitor environment-friendly, low-carbon, energy efficient, climate-resilient tourism activity, conference programs, community awareness programs, regional tourism plans , marketing strategies					
Implement and monitor energy efficient management systems and procedures					
Source, package, and promote climate-friendly and resilient tourism products and services					
GENERAL ADMINISTRATION					
Create and update a climate-friendly tourism website					
Develop, manage, monitor climate resilient, low-carbon, energy-efficient and environment friendly business strategies, tourism programs and projects, systems and procedures, coordination meetings, and information system					

HUMAN RESOURCE DEVELOPMENT					
Design, deliver, plan, promote monitor and evaluate a training system , and coach others on low-carbon, energy-efficient, environment friendly and climate resilient job skills					
Develop assessment tools and procedures that include measures on energy-efficient, low-carbon and low-risk indicators for staff performance assessment					
RESOURCE MANAGEMENT					
Develop, manage, monitor climate resilient, low-carbon, energy-efficient and environment friendly business and operational plans and strategies					
Lead and manage a development team that have knowledge on climate adaptation and mitigation					
Manage innovative, low-carbon and climate resilient tourism projects and programs, quality customer service, workplace relations					

## **Possible ways of Integrating CC Measures in the in the ASEAN Green Hotel Standards: Examples**

Table 6. Examples of Integrating CC in the ASEAN Green Hotel Standards

MAJOR CRITERIA	EXAMPLES ON POSSIBLE REQUIREMENT
Policy and actions for hotel operations	<p>Use of low-GhG emitting lights and air-conditioning units</p> <p>Minimum and maximum temperature for air-conditioning units for warm and cold seasons</p> <p>Use of hotel linens that are more adaptive to prevailing weather and climate conditions of the hotel location (i.e., light cotton or silk blankets instead of heavy comforters in hotels with tropical climates)</p> <p>Contingency plans for specific natural hazards to guarantee business continuity</p> <p>Reduction in the exposure of hotel facilities and services to natural hazards by creating a natural barrier that helps to enhance ecosystem services (e.g. trees around the hotel area, mangrove barriers in coastal areas)</p>
Use of Green Products	Encourage the use of products that can be sustainable sourced because of their resilient and environment-friendly features (i.e production process contributes to the enhancement of ecosystem services)
Collaboration with the community and local organizations	Creation of hotel activities that showcase local community practices on climate mitigation and adaptation
	Use of local produce from communities in order to support livelihood resilience in communities at risk to natural climate and weather-related hazards

Human resource development	Provision of trainings on how hotel operations and services can contribute to climate change mitigation and adaptation
Solid waste management	Carbon or methane capture and use system made operational
Energy efficiency	Building design or redesign that maximizes use of sunlight, wind, and air for hotel operations and services to reduce energy consumption from non-renewable sources
Water efficiency	Rainwater harvesting facilities
	Recycling of water for cooling systems of hotel facilities and other operations
Air quality management	Air quality monitoring and GhG emissions reduction plan
Wastewater treatment and management	Tracking GhG emissions sources from wastewater management practices  Alternative water treatment technologies with low GhG emissions and low energy demand  Protection of septic tanks from floodwaters
Toxic and chemical substance disposal management	GhG emissions inventory of products used for hotel operations and services  Minimize use of products producing hazardous wastes and contributing to greater GhG emissions