



**Capacity Building Seminar,
Balliol College, University of Oxford,
7 – 11 April 2008**

**Climate Change Adaptation and Mitigation in the
Tourism Sector: Frameworks, Tools and Practices**

Background

At the 2nd International Conference on Climate Change and Tourism, convened by the UN World Tourism Organization (UNWTO), the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in Davos, Switzerland in October 2007, there was a request from numerous participants, many from developing countries, for assistance in building capacity for the management of issues relating to tourism developments and climate change impacts. Specific requests were made for training events focusing on adaptation and mitigation techniques, tools and methods. To this end, UNEP, UNWTO and WMO joined together to highlight the need to mainstream efforts on climate change and tourism, building on the Davos Declaration (UNWTO 2007) and to respond to the requests from the Davos conference to provide assistance in building the capacity of tourist destinations and businesses to adapt to climate change and to mitigate the impacts of tourism on climate change. The 1st International Capacity Building Seminar on Climate Change Adaptation and Mitigation in the Tourism Sector builds on the Bali Strategic Plan (UNEP 2005) to enhance the provision by UNEP of capacity building assistance to developing countries and countries with economies in transition as well as broader concerns over the need for global institutional leadership with respect to tourism-related climate change adaptation and mitigation activities, as expressed in the Helsingborg Statement on Sustainable Tourism (Gössling et al. 2008).

Introduction

This report is a summary of the content, activities and outcomes of the 1st International Capacity Building Seminar on Climate Change Adaptation and Mitigation in the Tourism Sector, held at Balliol College, Oxford University during the week of 7th – 11th April 2008. The highly interactive seminar identified frameworks, tools and practices to aid the response of the tourism sector to the challenges posed by climate change.



Through this seminar and the associated publication UNEP, UNWTO and WMO continue their joint efforts to build the capacity of the tourism sector in order to address the recommendations made by the Davos Declaration. The Oxford seminar was the first step towards meeting these needs and contributing to the implementation of the processes demanded within the Davos Declaration. The subsequent regional events planned will build on its success.

Delegates:

31 delegates were invited to attend the seminar from the over 120 applicants expressing an interest. The criteria for selection were focused on ensuring that delegates from a range of countries and regions, and organisations and institutions were represented. The invited list was:

<i>Abdelwaheb Nmiri, Head of Research & Development, National Institute of Meteorology, Tunisia</i>
<i>Anne-Margaret Xavier, Acting Director Product Development, Ministry of Tourism and Civil Aviation, St Lucia</i>
<i>Anoja Herath, Assistant Director, Climate Change & Air Pollution, Ministry of Environment & Natural Resources, Sri Lanka</i>
<i>Ayşe Didem Akman, Head of Section Winter & Ecotourism, Tourism Planning, Ministry of Culture and Tourism, Turkey</i>
<i>Bernardo Peredov, Researcher Ecotourism/Indigenous Communities, Oxford University Bolivia & UK</i>
<i>Cara Holcombe, Senior Project Manager, EC3 Global (Sustainable Tourism Services), Australia</i>
<i>Catalina Etcheverry, Consultant: Sustainable Consumption and Production Branch, UNEP</i>
<i>David Lesolle, Chief Meteorologist, Ministry of Environment Wildlife and Tourism, Botswana</i>
<i>Donna McRae Smith, Project Officer, Sustainable Development Programme, CARICOM, Guyana</i>
<i>Dr. Austin Bowden-Kerby, Senior Scientist and Director, Living Reefs Initiative, Counterpart International, Fiji Islands</i>
<i>Dr. Eleni Antoniadou, Executive Manager, Greek Ministry of Tourism, Greece</i>
<i>Dr. Maharaj Vijay Reddy, Lecturer in Tourism Management, International Centre for Tourism & Hospitality, Research, Bournemouth University, UK</i>
<i>Dr. Subandono Diposaptono, Deputy Director for Coastal Disaster & Climate Change, Directorate Marine, Coasts & Small Islands Affairs, Indonesia</i>



Dr. Ulric Trotz, <i>Science Adviser: Caribbean Community Climate Change Centre, Belize</i>
Earlston Mcphee, <i>Director: Sustainable Tourism Planning, Bahamas Ministry of Tourism, Bahamas</i>
Helena Rey de Assis, <i>Associate Programme Officer, Tourism Programme UNEP</i>
Ivo Ngwese, <i>Researcher: Ecotourism, London Metropolitan University UK & Cameroon</i>
James Whittingham, <i>Environmental Manager, TUI Travel PLC</i>
Judith Kepher-Gona, <i>Project Officer Environment & Tourism, Ecotourism Kenya, Kenya</i>
Lt Col Akram Bhatti, <i>Deputy Secretary: Tourism, Ministry of Tourism, Pakistan</i>
Mahmoud El-kaisouni, <i>Environmental Advisor to Ministry, Ministry of Tourism, Egypt</i>
Mareba Scott, <i>Sustainable Tourism Product Specialist, Caribbean Tourism Organization, Barbados</i>
Maria Kusasira, <i>Program Officer, Action on Climate Change, Uganda</i>
Mario Bravo, <i>Senior Development Communications Officer, World Bank</i>
Momodou Jobe, <i>Director, Department of Product Development, Gambia Tourism Authority, Gambia</i>
Mrs. Nongnat Ouprasitwong, <i>Climatological Academic Group, Meteorological Development Bureau, Thailand</i>
Muhmmad Riaz, <i>Director, Pakistan Meteorological Department, Pakistan</i>
Richard Kapere, <i>Senior Planning and Environment Impact Assessment Officer, Uganda Wildlife Authority, Uganda</i>
Sovannora Ieng, <i>Advisor: Senior Minister of Environment, Ministry of Environment, Cambodia</i>
Tina Williams, <i>Director of Tourism, Ministry of Tourism, Jamaica</i>
William Pitre, <i>Tourism Planner, Puerto Rico Tourism Company, Puerto Rico</i>

Speakers and facilitators:

- Dr. Murray Simpson, Oxford University Centre for the Environment (OUCE)
- Dr. Stefan Gossling, Western Norway Research Institute
- Dr. Daniel Scott, University of Waterloo, Canada
- Dr. Stefanos Fotiou, UNEP
- Luigi Cabrini, UNWTO
- Gabor Vereczi, UNWTO
- Dr Mark New, Oxford University Centre for the Environment (OUCE)
- Dr Caroline Sullivan, Oxford University Centre for the Environment (OUCE)
- Dr. Ulric Trotz, Caribbean Community Climate Change Centre (CCC)
- Mario Bravo, World Bank
- Dr. David Dodman, International Institute for Environment and Development (IIED)



James Whittingham, TUI Travel PLC

Emma Whittlesea, South West Climate Change Impacts Partnership

Dr. Takeshi Takama, Stockholm Environment Institute (Oxford)

Dr Stephan Harrison, University of Exeter & University of Oxford (OUCE)

Secretariat / Rapporteur

Liz Gladin, *Department of Anthropology, University of Kent*



Day 1: Tuesday 8th April 2008

- ***Welcome and Introduction; Dr. Stefanos Fotiou, Dr. Murray Simpson, Luigi Cabrini***

Dr Murray Simpson, academic director of the event and lead author of the associated publication, opened the seminar with a welcome to all the delegates and the speakers. He noted that following their joint working on the Davos Conference and the subsequent Davos Conference Technical Report the three UN agencies – UNEP, UNWTO and WMO had maintained their joint focus on the current seminar, and their ongoing commitment to it was indicative of the importance of event and its subsequent outcomes and processes.

Dr Stefanos Fotiou again welcomed the delegates and speakers on behalf of UNEP, and thanked Dr Simpson and his team for their organization and administration of the seminar, as well as the UNWTO and WMO for their support in this joint initiative to build the capacity of the tourism sector to enhance the management of issues related to tourism developments and climate change impacts.

Luigi Cabrini of the UNWTO emphasized the importance of the tourism sector in many of the areas most vulnerable to climate change and the need to develop capacity building in adaptation and mitigation within the sector.

Dr Daniel Scott, representing the WMO in his role as a member of the WMO Expert Team on Climate and Tourism, emphasized the importance of this first seminar and its seminal role within the ongoing work on climate change and tourism. He highlighted the importance of working together in building capacity for change.

Session 1: Climate Change and Tourism - the Current Situation

- ***Climate Change Science: Overview Developing Countries and SIDS; Dr Mark New (OUCE) (Appendix 1)***

Dr New provided an overview of the current state and major issues in the field of Climate Science. He included a summary of the uncertainties inherent in climate science at both global and local levels, as well as the important influences of ENSO and teleconnections in climate modelling. He noted the complexities of the multiple scales involved and the



difficulties of downscaling from the global to the local. He summarized that climate science, whilst often uncertain, is an important tool in measuring and assessing both global and local impacts of climate change. He also emphasised the importance of local expertise in identifying the relevance of climate science to local circumstances, in informing climate science through local experiences and in addressing the impacts of climate change.

- ***Climate Change Science: Caribbean Specific; Dr Ulric Trotz (CCC) (Appendix 2)***

Dr Trotz provided an overview of climate science specific to the Caribbean region. He identified the characteristics of the region that made it especially vulnerable to the impacts of climate change, the projected changes and trends and likely impacts (increases in temperature, sea level rises, extreme events, coral bleaching, drought and flood, biodiversity and land degradation, agriculture, tourism and health impacts). He noted that for the Caribbean, the impacts scales are total, i.e. when a hurricane hits an island it affects the whole island infrastructure rather than a region and therefore heavily influences the response capacity of the island to such an event. He summarized by highlighting the importance of tourism within climate change, in that it offered an umbrella to essential multi-disciplinary and multi-sectoral policy and planning (e.g. incorporating water, health, agriculture and infrastructure) in adapting to climate change in the region.

- ***Panel Session and Open Floor Discussion; UNEP / UNWTO / Dr Mark New / Dr Ulric Trotz. Chair: Dr Murray Simpson.***

The panel discussion covered wide ranging aspects of climate science and tourism. There was debate as to the problems of identifying what it is we are adapting to within the context of an uncertain science and how planning and policy can incorporate uncertainty. The crucial importance of local knowledge and experience was of particular interest, and there was a general feeling from the delegates that local knowledge was under-valued in the climate science debate. Local knowledge and experience were essential to fill the substantial knowledge gaps in the field, for example:

- local experiences of climate change to inform global climate science,
- local and historical experiences of adaptation to inform adaptation and mitigation policy and planning,
- local experiences of the impact climate change adaptation and mitigation polices on tourism demand and tourism experiences.



- ***Climate Change and Tourism State of the Art; Dr. Daniel Scott & Dr. Murray Simpson (Appendix 3).***

Dr Scott and Dr Simpson presented the Davos Conference Technical Report. They highlighted the statements in the IPCC AR4 report that the climate is changing and that the pace of change was likely to increase. They emphasized the realities of tourism within the context of global climate change, in terms of:

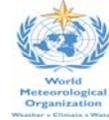
- the impacts of climate change itself and the impacts of the necessary adaptations to climate change, at tourism destinations; the economic risks of climate change and tourism ‘vulnerability hotspots’; the need for destination-level adaptation and time-lines for such adaptation.
- the implications for tourism demand at a destination level, the impacts on the climate as a resource for tourism, of tourist behavioural change resulting from climate change and the impacts of mitigation policies on tourism demand.
- the impact on climate change of emissions from tourism, the calculation of emissions from the tourism sector, and mitigation policies and scenarios

Dr Scott and Dr Simpson also noted the Davos Declaration call for tourism to respond to the issue of climate change and for governments, international organisations and institutions, the tourism industry and destinations, and tourism consumers to participate in this response.

- ***Modelling and Forecasting Climate Impacts in Developing Countries and Small Island Developing States; Dr. Mark New (Appendix 4) & Dr. Ulric Trotz (Appendix 5)***

Dr New summarized the nature and importance of climate forecasts as opposed to climate modelling using historical data. He detailed the relationships between emissions and biogeochemical cycles, and the uncertainties inherent in these processes. He also noted the problems of applying global models to regional models, the difficulties resulting from incomplete climate change forecasts and the challenges in extracting applicable information from the range of data available. He emphasised that any adaptive activity needs to be robust across these uncertainties.

Dr Trotz outlined the role of regional climate models in scaling global climate models. In the context of the Caribbean, characterized by complex meteorological interactions a high-resolution model is required for climate prediction. Dr Trotz reviewed the use of several regional modelling activities, including PRECIS, as well as some of the projections arising out of the PRECIS activity. This includes 1-5 °C annual warming by



2080's, greater warming over summer months as opposed to winter months, more severe summer drying (i.e. during wet season).

- ***Climate Change and Tourism Vulnerability Assessments; Dr. Caroline Sullivan (Appendix 6)***

Dr Sullivan detailed the characteristics of the tourism sector which made it vulnerable to climate change and the indicators available to assess its vulnerability. These included the need for the tourism sector to provide infrastructure for tourists such as water, roads, and transportation and health services as well as meeting the demand for cultural, heritage, ecological and environmental attractions. She used the example of water services as a basis, highlighting the vulnerabilities created e.g. through inefficient water use, and the investment required to ensure provision, and thus reduce vulnerability. Dr Sullivan noted that climate change which results in a reduction in the reliability, quantity and quality of available water resources will result in higher levels of vulnerability, with significant impacts on tourism. She questioned what it is we need to address in respect of vulnerability: who is vulnerable and to what; do we understand the certainties and the uncertainties; do we recognize the realistic threats and do we have the capacity for change?

Dr Sullivan introduced the concept of integrated indices for managing information and orchestrating change processes and to track trends. However, the available indices need to be applied at local scales to aid local management. The Climate Vulnerability Index captures six components which need to be identified and addressed in the context of vulnerability to climate change:

- geospatial (e.g. specific local geographical characteristics that make a location vulnerable)
- resource (e.g. current level of resources stress)
- access (e.g. extent of service coverage)
- capacity (e.g. to identify, manage and adapt)
- use (e.g. are natural resources used efficiently)
- environmental (e.g. environmental impacts of climate change and adaptation policies)

She worked through the process of calculating the climate variability index for a specific region/sector and identified scale / comparison issues. The climate variability index was displayed visually for an unspecified small island state, based on rapid appraisal from existing data. Dr Sullivan summarized her presentation by noting that the use of indicators such as the climate vulnerability index can be a useful way of combining



physical and socio-economic data into meaningful information for adaptation implementation and management. It allows spatial and temporal comparisons and the identification of vulnerable destinations and stakeholders, to aid appropriate adaptation strategies.

▪ **Open Discussion and Knowledge Share Workshop 1**

A joint knowledge share session followed, where the delegates were asked to address some of the following questions:

- On what aspects of climate science do you believe we require more information?
- On which existing, and potential, impacts of climate change in your country do you believe you need more information? And Why?

Climate Change Science and Information Needs

Group 1: Caribbean Islands

We need more information on climate change science as it affects us e.g. storm surges, hurricanes. We need this information in real-time so that tourism operations can manage their activities. We need it in a form that all can understand, and also with advice about what to do (e.g. not just hearing on the radio about storm surges but advice about what people and communities can do to help themselves). Planning requires more localised weather predictions; to mitigate negative impacts but also make the most of opportunities e.g. heavy swells are good for surfers so information about these would enable us to provide a better service to these customers.

We need information about the health implications of climate change both at a destination level and also from the perspective of the source markets. This would help us plan for any necessary preventative activity and for the consequences of health scares reducing demand.

We need more inter-sectoral activity e.g. with agriculture, transport, health and water planning. We rely heavily on food imports and so need to assess the demands of local food demands as well as the impact of climate change on the provision of food from our overseas suppliers.

We need information about the impacts of climate changes on visitor choices and



behaviours so we can respond to them (real-time and projected; real and perceived).

Group 2: Africa

We have similar issues as above with respect to other sectors e.g. agriculture, water, transport, health.

One area lacking information is information on potential changes in seasonal patterns which might influence tourist behaviours such as when they travel. This may result in opportunities but will have knock on effects on e.g. incomes and planning.

Africa requires regional models based on accurate data and we have problems in accessing the data that is available. We need better access to better data. We also need meso- to-micro-scale data on the impacts of climate change on local climates e.g. at altitude in volcanic craters; on the incidence of bush-fires; on impacts on flora and fauna e.g. the migration patterns of wildlife. These are specific concerns about which we have little information, and which influence the 'African' tourism 'product'.

We need data on specific geographical and environmental landforms/types e.g. tropical forests, mountain areas. Forests are 'climatic sinks' (*sic*) in global terms and we need data on the impacts of climate change on these special areas in order to manage them.

We also need information on infrastructure impacts, roads, airports etc. This might include mapping current infrastructure and analysing the effects of climate change and any adaptation needed to accommodate changes.

In many cases, local communities do not have the capacity to manage the problems arising from climate change.

Group 3: Asia – Pacific

Climate change information is often presented in a scientific way which is inaccessible to a 'public' audience. Lack of access and education causes ongoing problems and inaction. People need to be able to access data in a form appropriate to their needs. In addition information is required that is appropriate for their region / location – global level data is inadequate. There appears to be data available for the Australia region and a lot of work going on there, but much less for other regions in the Asia-Pacific region.

Mapping the African experience, information is required on specific activities and impacts e.g. on water, agriculture, transport and health. We need information on how deforestation in specific areas impacts on the region, the consequences of and for e.g.



incidence of forest and bush fires. Global data is obviously important but it is not sufficient for action in specific areas.

There are concerns in these regions and others about how to raise the profile of climate change impacts in disturbed or conflict zones where other issues are more pressing (war, disease etc).

We need research to identify adaptation and mitigation actions specific to the region or location. There are lots of potential actions but specific priorities will vary across and within regions.

How will population increases influence climate change impacts – many of the areas in this region are experience large increases in population and any adaptation and mitigation policies will need to plan for this.

Even when we do have data and information at the scale required, how do we translate this into policy and action? Inconclusive or contradictory data it is not helpful, and is likely to produce inadequate action or no action at all.

We need a unified voice in order to have input at national level response to climate change.

Group 4: Central & South Americas

We need models formulated to suit the specifics of our region; something that would offer a translation between global emissions, concentrations of green house gas data and local models. This would be especially useful for sectoral planning and environmental impact assessments.

Inter-sectoral approaches are essential to inform planning and policy across regions and to feed in tourism planning processes.

Availability and access to data and information is essential, as is fitting this data into spatial and temporal frameworks. Tourism developments occur at local levels and models are not yet available at such micro-scales.

The science is difficult for non-scientists to fully understand. In order for people to become interested and involved, it needs to be made more accessible without being over-simplified.



We need information on specific aspects and impacts on our region and tourism destinations e.g. tropical forests, beaches, water resources.

Group 5: Mediterranean

The group covered similar issues as others. Finer-scale resolutions of data are required; global data is useful but not applicable to policy and planning. We need information on impacts and outcomes for tourism, in a form accessible and understandable to those in the sectors, to tourism stakeholders.

The public need education on the meaning and implications of climate models and forecasts. This has to come from the scientists able to interpret the data for a wider audience.

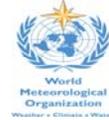
In the Mediterranean, sea levels rises are a specific issue e.g. the Nile delta is an area at risk and the impacts will affect a huge population base. We need information that we can apply in specific regions such as this.

Water scarcity is another area of concern in the region. Tourism is a hugely important sector across the region, it is also a thirsty one and the issues in water management are going to be severe. Tourism needs to be closely involved with the planning and management of water resources.

Rising temperatures are another aspect, especially increased summer temperatures which may result in a change of tourist peaks times. This will impact on other sectors – health, agriculture, transport etc.

Climate change impacts are likely to include changes in disease patters e.g. malaria spreading into the Mediterranean. We need to know what impacts this will have in the region in terms of health services provision, and also impacts at the source markets, from the point of view of the tourists and the tour operators.

We need advice and support to build our capacity in lobbying at senior levels, in order to get the perspective of the tourism sector heard.



Session 2: Overview of Assessments and Evaluations (Adaptation and Mitigation)

- ***Vulnerability Assessments for Climate Change and Tourism: Methods and Case Studies; Dr. Ulric Trotz. (Appendix 7)***

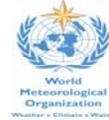
Dr Trotz provided an overview of the Caribbean Planning for Adaptation to Climate Change (CPACC) project working under the auspices of the Mainstreaming Adaptation to Climate Change (MACC) programme. He summarized the MACC approach which aimed to develop usable decisions tools and information resources to assist critical decision-making for mitigation and adaptation to climate change. The project focused on the agriculture, tourism, and water sectors. It developed resources relevant to regional circumstances by downscaling climate change projections and scenarios and identified adaptation options specific to the case study regions. Vulnerability measures were developed for natural systems and economic activity, and adaptation and management interventions designed for coastal zones, water, agriculture, infrastructure and human settlements and tourism. CPACC made several recommendations for policy planning and action.

- ***A Sectoral Approach to Climate Change and Tourism; Dr. Murray Simpson (Appendix 8)***

Dr Simpson discussed the importance of inter-sectoral as well as inter- and cross-ministerial collaboration when addressing issues of sustainable development, tourism and climate change. The sectors highlighted were: agriculture, water, infrastructure, natural resources, waste management, security, energy, health, and climate. He noted that these were all areas that the delegates had covered in their knowledge-share sessions to date, and so they had immediate and personal experience of the need for inter-sectoral working.

- ***Adaptation Strategies and Case Studies; Dr. Daniel Scott (Appendix 9)***

Dr Scott summarized the need for climate change adaptation and discussed the adaptive capacity of stakeholders across the tourism sector. He presented a portfolio of climate change adaptations utilized in the tourism sector, drawn from the Davos Conference Technical Report. He discussed the current state of knowledge on climate change adaptation in the tourism sector and the time lines available for adaptation measures to occur.



- **Open Discussion and Knowledge Share Workshop 2**

The delegates were asked to complete worksheet: *Key Climate Change Vulnerabilities in the Tourism Sector*. This asked for a rating of tourism resort and product vulnerabilities and tourism market vulnerabilities, and the level of knowledge in relation to these.

Key Climate Change Vulnerabilities in the Tourism Sector

Tourism resort & product vulnerabilities.

- Sea level and temperature rises, coastal erosion, coral bleaching, loss of low-lying land, including coastal lands vital to tourism industries.
- Changes in precipitation levels: flooding and drought, landslides
- Extreme events: hurricanes, storm surges, wildfires, limnic eruptions
- Damage to infrastructure and related costs
- Impaired niche-tourism attractions e.g. yachting, cruises, diving, snow sports, glacial, cultural / indigenous heritage, golf
- Negative impacts on infrastructure, human settlements and services
- Biodiversity loss / ecosystem changes
- Impacts on agriculture including fisheries; food security
- Negative impacts on health e.g. spread of malaria, dengue fever to places previously un-affected
- Water scarcity
- Inadequate waste management
- Existing poverty may reduce capacity for adaptation and change
- Risks to energy supplies
- Resource conflicts e.g. water, land use for tourism, agriculture, settlement, wildlife
- Security issues
- Lack of funding to protect tourism product range e.g. for insurances, adaptive changes, flood protection
- Issues are not priority in many areas as they are seen as impacting 'tomorrow'
- Some areas and regions more vulnerable than others due to impacts, reduced capacity for change etc.

Source-market vulnerabilities.

- Climate change mitigation activities especially the impacts of any aviation-related mitigation policies
- Disrupted supplies e.g. imported foodstuffs
- Price increases in destination affecting tourist visits



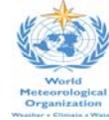
- Climate change-related political conflicts between communities e.g. over water resources
- Negative perceptions and behavioural changes – carbon footprints, tourists opting not to travel
- Niche-tourism markets affected by perceptions and impacts of climate change e.g. diving where coral bleaching occurs, skiing where snow falls decline.
- Disease outbreaks and associated ‘bad press’ even when not justified
- Increase in extreme events leading to tourists going elsewhere
- Global financial crises affecting tourist activity, second homes, etc
- Security – tourists feeling insecure travelling to certain areas
- Lack of education in source markets on impacts (and opportunities) brought about by climate change and information for tourists about destinations

Potential Opportunities

- New or replacement markets may open up as a result of climate change e.g. less emphasis on skiing in areas of reduced snow fall but a move to non-ski outdoor activities, cultural and ‘wellbeing’ visits, extended seasons if dry (or wet) seasons are prolonged resulting in improved road access
- Expanding or changing tourist seasons e.g. from height of summer in Mediterranean to current ‘shoulder’ seasons through the spring and autumn
- Opportunities for more sustainable energy supplies e.g. solar, hydro-power in some areas
- Opportunity to diversity tourism product e.g. market as an ‘eco-friendly’ destination, appealing to a different customer base
- Opportunity for tourist industry to become more environmentally responsible – a catalyst for change
- Opportunity to strengthen other sectors and reduce reliance on just one sector
- Opportunity to strengthen links with local markets e.g. regional customers who are less exposed to e.g. aviation impacts of mitigation, than long-haul customers

- ***Reducing Carbon a Global Perspective for a Global Problem; Dr. Stefan Gossling (Appendix 10)***

Dr Gossling provided an overview of aspects of carbon emission reductions, including looking at global mobility and the distribution of mobility, emissions from tourism, global trends and drivers and a range of issues and approaches in mitigation. His discussion included the role of aviation, the concept of ‘hyper-mobility’ and changing travel patterns,



and he concluded by summarizing the four steps of mitigation: elimination, reduction, substitution and offsetting.

- ***Mitigation Evaluation Options for Tourism: Methods and Case Studies; Dr. Stefan Gossling (Appendix 11)***

Dr Gossling highlighted five sectors within the tourism industry that needed to engage with mitigation: governments, transport, accommodation, tour operators / travel agents, and destinations. He identified case studies where mitigation policies had been implemented within each sector: government engagement through EU ETS; transport engagement through carbon labelling; accommodation engagement through building design initiatives, tour operators through providing different travel options (e.g. rail) and destination engagement through communicating with consumers in geographically close markets.

- ***Panel Session and Open Floor Discussion; Dr. Stefan Gossling, Dr Daniel Scott, UNEP, and UNWTO. Chair Dr Murray Simpson***

Dr Stefanos Fotiou noted that tourism payments if properly managed could offer a great opportunity for a transfer of wealth from rich countries to poor countries which were vital to the recipient countries. However there were concerns as to how much of these payments would actually stay within the recipient countries, as a large proportion may be lost through leakages. It was vitally important that sustainable tourism development was prioritised to ensure all benefit from it. An example was given of Swedish travellers visiting Thailand and offsetting their 'carbon footprint' to enable people in those destinations in Thailand to enjoy a better quality of life. This is very acceptable as long as the revenues benefit the people for whom they are intended.

Luigi Cabrini said that the links between emissions arising from tourism and individual travellers was an ethical issue that was up for debate, but the economic context were as important. If the travelling individual generates wealth in the destination country, then it goes beyond just an environmental issue. It involves the distribution of tourist incomes and cannot be considered as an isolated environmental phenomenon.

Dr Gossling highlighted aspects of inequality inherent in the debate – geographical inequality involving the popularity of budget airlines which focus short-break travel to cities over more rural destinations and how that impacts on tourism in rural communities; and distributional inequality between who travels and who doesn't, how people chose to travel and e.g. hyper-mobile travellers.



Day 2: Wednesday 9th April 2008

Session 3: Adaptation

- **Essential Elements of an Adaptation Strategy; Dr. Daniel Scott (Appendix 12)**

Dr Scott presented information regarding the essential elements for developing an adaptation strategy. He identified several important questions and issues: who is responsible for development of such a strategy; what is involved in any risk management planning; how do adaptation activities link with other planning processes; what legislation and enforcement is required, how to include relevant education and communications strategies within the adaptation process; the importance of access to and availability of 'good science' and information on impacts; what support networks are required and how is adaptation financed.

- **Open Discussion and Knowledge Share Workshop 3**

The delegates were asked to complete a worksheet: *Ongoing and Future Adaptation Options in the Tourism Sector*. This asked for current and anticipated adaptation strategies within their region. The responses about impacts and adaptations are summarized below.

Ongoing Adaptation Strategies Being Used to Address Tourism Sector Vulnerabilities

Impacts	Adaptations
tropical storms	public awareness, real time weather information, early warnings, enforcement of building codes, disaster planning, insurances, enhance tourist confidence of ability to cope with events
heavy rain and floods	irrigation networks, preservation of wetlands, building design to accommodation water e.g. on stilts, floating



drought	rainwater harvesting, recycling, desalination plants, dams, use of grey water sources for e.g. golf courses, water conservation education campaigns, metering,
high costs of energy sources	development of renewable sources, designing energy-efficient buildings
preservation of ecosystems and biodiversity	monitoring, development of national parks and protected areas, biodiversity zoos to ensure species survival, regulation of access,
sea levels rises	enforcement of building set-backs, protection systems,
sea temperature rises	monitoring, cultivating and establishing corals tolerant to the higher temperatures
coastal erosion	monitoring, protection systems and coastal engineering, building up and protecting vegetated dunes/mangrove areas, fish-house structures to absorb wave energy, coral gardening to improve health and growth rates, artificial reefs,
agriculture	research into crops suited to new environments
increases in vector-borne disease	surveillance systems, increased spraying in mosquito areas, research into treatment, education and awareness-raising
diminished snow fall	snow-making, identify other attractions e.g. walking and climbing, nature tourism,
waste	reduce, re-use, recycle
climate change	education, education, education, marketing new opportunities and attractions that result from climate change, community partnerships and capacity building initiatives, 'green' certification, offsets etc. political lobbying,
security implications	awareness and education



Anticipated Adaptation Strategies to Address Tourism Sector Vulnerabilities (not already mentioned above)

Impacts	Adaptations
beach litter from storms etc	coastal zone management
food security	plans to strengthen agricultural policy and planning
biodiversity and ecosystem changes	where possible protect indigenous species in-situ or identify new areas for translocation/transplantation, control invasive species, creation of wildlife corridors, economic valuation of wildlife resources to ensure they are 'mainstreamed'
financial barriers to action	remove barriers to action, strengthen institutions
energy efficiency	enforce strict building codes on all new developments
changes to tourist visiting seasons (shortening or extension)	awareness and education, implement changes to events and activities schedules, identify new tourist business opportunities to accommodate changes
storm surges	re-design of major causeways and other transport routes to ensure they are not affected during surges, re-locate vulnerable settlements/activities
flooding and landslides	restructuring of riverbeds to protect e.g. coral reefs from affects of mud slides from river mouth, re-forest watershed
drought	encouraging the planting of drought resistant garden and municipal vegetation
tropical storms	strengthening legislation to support enforcement of building codes etc.
climate change	improve stakeholder engagement through community and regional initiatives, establish a tourism industry research platform, implement systems of collaborative and centralised information and knowledge



	sharing, link with other regions to share knowledge, data, tools, include local people in climate change adaptation activities at start, not as an after-thought
--	--

- **Adaptation for Destinations; Emma Whittlesea, South West Climate Change Impacts Partnership: (Appendix 13)**

Emma Whittlesea provided insights into the process of implementing an adaptation strategy at the destination level, in the south-west of England. She provided some background to the South West Climate Change Impacts Partnership and its mission, and a picture of the tourism industry in the south west of England. She discussed the major regional climate change impacts and the history of the decision to rise to the challenge of developing an adaptation strategy. Local drivers were identified as catalysts for change, including recent heavy floods. She emphasised the importance of ‘marketing’ the adaptation strategy to businesses, offering opportunities as well as information about risks and also educating both tourist operators and consumers about the issues.

- **Open Discussion and Knowledge Share Workshop 4**

The delegates were asked to how regional bodies could support tourism adapt to climate change, both in relation to tourist businesses and visitors and to identify risks and opportunities resulting from climate change.

<p><i>Role of Regional Bodies in Supporting Sustainable Tourism</i></p> <p>Group 1: Caribbean Islands</p> <ul style="list-style-type: none"> ▪ Build on the established work of the Caribbean Tourism Organisation (CTO) in the region and encourage knowledge transfer between islands as this is often lacking at a local level. ▪ Access the source markets directly and communicate information about the regions and destinations. ▪ Pursue ‘ecological tourism’ and ‘low carbon’ tourism to encourage people interested in more than sea, sun and sand holidays. ▪ Advocate and support renewable energy supplies. ▪ Enforce local building design rules to improve energy efficiency and ‘low key’ tourism. ▪ Improve communication and marketing strategies not just in traditional long-haul source markets but also intra-regional source markets.



Group 2: Africa

- Mobilize regional resources, finances and technical know-how and ensure this is transferred to both businesses and tourists.
- Improve education and capacity-building; request external help where internal capacity is lacking.
- Encourage the collection of good quality, regionally-relevant data and use this to influence regional and national policy.
- Encourage the development of regional networks and networks across tourism sectors both cross-regionally and across regional / niche areas e.g. national parks learning from other national parks in different regions or countries.
- Develop 'beacons' or 'champions' who will act as role models to other businesses or organisations in order to disseminate ideas and good practice and to influence policy.
- Enable a bottom-up approach through networks, where scientific, local and policy knowledge result in action.

Group 3: Asia – Pacific

- Specific education and information activities e.g. flyers for cultural or environmental activities, environmental importance and implications of climate change for locations such as tropical forests, ski areas, coasts.
- Provision of early warning systems for e.g. storm surges, disease outbreaks.
- Waste management interventions to encourage RRR - reduce, reuse, recycle.
- Provision of adaptation models for local and regional businesses.
- Online information for visitors about destination and about any cautions e.g. extreme weather.
- Adaptation guides, frameworks, etc. for smaller businesses. Larger organisations will likely develop their own protocols, but smaller business might benefit from template on which to base their adaptive activities. Also encourage smaller business to collaborate with each other.
- Provide regional and local 'environmental gain' activities e.g. carbon offsetting activities, tree and coral planting, where visitors and business can get involved directly and not through third parties.

Group 4: Central & South Americas

- Make scientific information user-friendly and relevant to the region.
- Provide information to tourists e.g. on flights, in accommodation, during tours and visits.
- Regulate financial institutions to improve transparency and ensure they take a lead in promoting sustainable tourism through their lending policies, encouraging



and facilitating the development of sustainable practices through e.g. incentive schemes.

- Improve awareness amongst tourists as to their responsibilities; make transparent the way their financial input contributes to the development of sustainable tourism.
- Disseminate good practice through regional networks and knowledge sharing.

Group 5: Mediterranean

- Highlight the role of regional governments in promoting sustainable tourism.
- Emphasis the role of businesses in supporting sustainable tourism for local communities and regional economies.
- Build links between stakeholders: tourists, communities, businesses.
- Provide online knowledge sites for tourists, local communities, businesses and other organisations providing relevant information.

- ***Developing and Implementing a Climate Change Adaptation Process; Dr. Daniel Scott & Dr. Murray Simpson (Appendix 14)***

Dr Scott and Dr Simpson provided an overview of a seven step process of developing an adaptation strategy in the tourism sector. They presented a diagram (seminar publication Simpson et al. 2008) detailing the steps and the feedbacks and inter-relations between them. The sectors involved within this integrated relationship included: sustainable agriculture, sustainable societies and communities, sustainable environments and natural resources, sustainable economic systems, sustainable energy, infrastructure and services, climate and sustainable destinations and tourism. The presentation then took delegates through the seven steps, starting with identifying the wide range of tourism stakeholders which might be involved in any adaptation process. This included a case study of such an activity from the Cook Islands. Step two involves screening for vulnerability and step three is the assessment of adaptive capacity. Step four details the process of identification of adaptation options and step five is the evaluation of options (with an overview of processes of defining evaluation criteria) and selection of the most appropriate option(s). Step six is implementation of the chosen adaptation options and step seven involves their monitoring and evaluation. The emphasis at all times is on the iterative nature of this process and the feedback relationships between the seven steps.



- **Adapting to Climate Change in Developing Countries; Dr. Takeshi Takama, Stockholm Environment Institute (SEI) (Appendix 15)**

Dr Takama provided an overview of the activity of the SEI in relation to adaptation to climate change in developing countries. He discussed the concept of adaptation used by SEI, being a process of assessing risks, reducing vulnerability and increasing capacity for change, whilst accommodating associated physical constraints and social processes. He also noted importance of scale issues and the potential inconsistencies between global, national regional and local, as well as temporal scales, all of which can form limits to adaptation. Dr Takama summarised the roles of stakeholders within adaptation process; those who fund projects e.g. the World Bank and other NGOs, and the importance of mainstreaming climate change adaptations within their wider activities, as well adaptation activities at a community level. He concluded that adaptation is not just a technological or ‘know-how’ based process, but as often involves socio-institutional learning processes, so that encouraging learning from others through partnerships and networks is as much a part of robust adaptation in the face of uncertainties as any other approach.

- **Knowledge Share Workshop 5**

The delegates were asked to identify barriers to adaptation. This was done in informal as opposed to regional groups and the groups were asked to rank their responses.

Barriers to adaptation

Group 1

1. Lack of data, knowledge, awareness about the impacts of climate change, both generally and in relation to tourism specifically.
2. Lack of technological solutions (not just a problem of lack of access to technological solutions – more fundamental than this).
3. Lack of financial support for adaptation.
4. Lack of the necessary coordination between government agencies.
5. Lack of adequate legislation and lack of enforcement even when legislation is available.
6. Lack of skilled people to implement changes.
7. Customer expectations were limiting change e.g. of water use/availability etc.)

Group 2:

1. Lack of collective vision for action and a resistance to change.
2. Conflicting priorities mean that climate change issues get sidelined.



3. Lack of financial resources.
4. Lack of technology.
5. Lack of data and information that is country- region- or sector-specific, 'digestible' to non-scientists and accessible; therefore a consequent lack of awareness of issues and importance.
6. Lack of institutional capacity.
7. Lack of human resources.

Group 3:

1. Lack of political will brought about by short-term political timescales.
2. Lack of financial systems to support climate change activity.
3. Lack of understanding of the risks (lack of information).
4. Cultural and religious barriers to change.
5. Lack of legislation and enforcement
6. Lack of human and institutional capacity.
7. Bureaucratic bottlenecks: national and international institutions.
8. Lack of incentives for adaptation.

Group 4:

1. Lack of political will.
2. Scepticism about climate change and the need for action.
3. Lack of financial support systems.
4. Resistance to change.
5. Lack of government coordination and leadership.
6. Local / regional conflict: climate change adaptation activities not always a priority.
7. National and regional self-interest may encourage some areas to promote short-term gains over longer-term adaptation.
8. Lack of information to increase awareness.
9. Lack of technical expertise.

Group 5:

1. Lack of awareness and urgency.
2. Lack of funding for adaptation activities.
3. Lack of human resources.
4. Lack of commitment at senior levels.
5. Lack of capacity for change.



- ***Adaptation to Climate Change in the Tourism Sector in the Fiji Islands: preliminary experiences from a GEF project; Gabor Vereczi, UNWTO (Appendix 16).***

Gabor Vereczi presented his personal experiences of a project from the Fiji islands, which is an example of an economy driven predominantly by tourism. He summarized the impacts of climate change in the region, with the key concerns being increases in extreme events, sea levels rises and beach erosion, and water scarcity. The project identified the stakeholders that needed to be involved in the consultation and the main barriers to adaptation. Two major themes emerged from the initial project consultations; the need for sustainable management of resources within the context of climate change and ensuring the social sustainability of tourism. The consultation process also identified policy gaps and legal loopholes affecting enforcement and new product ranges e.g. 'over-water' bungalows, and the need for increase meteorological support to enable seasonal forecasts to be better used in the decision-making process. Demonstration projects were developed out of these initial processes.

Session 4: Mitigation

- ***Measuring Carbon Emissions: How to...; Dr. Stefan Gossling (Appendix 17)***

Dr Gossling identified three main areas of mitigation in the context of climate change: transports, accommodation and activities. He summarized a calculation method for estimates of energy use by accommodation type, transport mode and activity.

- ***Knowledge Share Workshop 6***

This was an informal session where delegates were asked to calculate the emissions produced by a 14 day journey from the UK to Cuba on the basis of certain accommodation and activity types.

Reducing emissions in the tourism sector

Delegates were asked to identify practical areas within the tourism sector where emissions might be reduced. These included:

- Ensuring activities and itineraries were planned so as to avoid unnecessary trips and encourage longer, visits with fewer trips.



- Assessing the need for turning off car and bus engines whilst idling (as opposed to keeping them running to the purposes of air-conditioning etc.).
- Encouraging/enforcing energy-saving building design (key-lights in hotels, solar water heating) and e.g. floating hotels to accommodate changes in sea level etc.
- Provide staff incentives and review schemes for energy-saving initiatives.
- Encourage more outdoor activities to reduce internal resource use e.g. air-conditioning or heating.
- Encourage participation in activities which use less energy e.g. sailing and wind surfing rather than water- and jet-skiing.
- Educate tourists about the impacts of their choice of activities.
- Encourage the use of energy efficient transport, e.g. trains, hybrid cars, bicycles. Use camels or horses instead of 4X4 cars on desert trips.
- Encourage the use of gold standard emissions certification schemes; reduce costs of participation for small businesses.
- Implement offset projects locally for tourists who contribute locally so they can see the impact.
- Look across and beyond the sector e.g. use boat trips up the Amazon for tourists and other transportation needs.
- Combine top-down policy approaches with bottom-up community approaches

- ***Investigating CO₂ and Ecological Footprint of Tourism; Emma Whittlesea, South West Climate Change Impacts Partnership (Appendix 18)***

Emma Whittlesea presented the work the SWCCIP conducted with the Stockholm Environment Institute's REAP (Resources and Energy Analysis Programme) modelling tool. She provide a demonstration of REAP and its ability to detail consumption activities and how this has been used by SWCCIP to identify 'ecological footprints' for the tourism industry in the south west of England. REAP has been used in several areas across England for similar purposes. Its potential applications include: prioritising action; policy assessment; socio-economic analysis; assessment of development impacts; future thinking through policy scenarios.

- ***Carbon Neutral Destinations: The Future? Dr. Stefan Gossling & Dr. Murray Simpson (Appendix 19)***

Dr Gossling provided an overview of the carbon-offsetting options for reducing emissions in the tourism sector. He noted that 50% of carbon-offsetting companies are in the not-for-profit sector and 50% are profit-making companies and that there is a substantial



'credibility gap' in the context of carbon offsetting in terms of the locations and benefits accrued. The recent Caribbean Tourist Organisation report noted the huge potential of offsetting for reducing emissions from tourism, but the means by which it is implemented is vitally important, specifically in relation to the choice of credible partners. Gold Standard Certified Emissions Reductions (GS CERs) schemes are the only means by which to ensure sufficiently high standards and transparency.

Dr Gossling suggested that the benefits of carbon-offsetting by tourists visiting a region should ideally be implemented within that location, with tourists being given the opportunity to visit projects that they have supported through their offsetting decisions. One carbon-offsetting company 'Climate Care' has recently been acquired by a major global financial institution and this is an indication of the market for offsetting projects but it also indicates the need for strong regulation and enforcement systems.

- ***Panel Session and Open Floor Discussion - Dr. Stefan Gossling, Dr Daniel Scott, UNEP, UNWTO. Chair Dr Murray Simpson.***

UNEP and other agencies need to take the lead in the development of quality offsetting initiatives, providing advice and guidelines to governments and organisations as well as to consumers.

In terms of businesses responsibilities, tourism organisations such as TUI Travel PLC services somewhere in the region of 30 million customers annually and so has a great potential to get involved in carbon-offsetting and to take a lead in sustainable and innovative projects 'on the ground'. In addition the role of hotels and other destination-business was discussed. Hotels supporting gold standard schemes would be able to market their commitment to customers, as well as their own mitigation activities such as reducing energy consumption and water use.

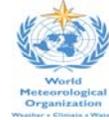
There was a discussion as to the voluntary vs. compulsory route for carbon-offsetting, especially in light of the fact that most offsetting is purchased by companies rather than individuals and most of this is on a voluntary basis.

Again there was a discussion about the need to promote Gold Standard schemes and ensure transparency on the financial management and implementation of benefits at local levels. Tourists to any region need to know that their money is being put to the use for which it was intended and to be able to see the implementation of projects funded by their money in the locations they visit.



Communication is an important issue – gold standard emissions schemes need to be branded and marketed to customers in the same way as any other tourist product, along with the messages about why these initiatives are important in the context of climate change. In addition, there are relatively few gold standard schemes and there is potential for many more to be established.

There was a discussion as to what form offset-funded activity should take. Should it be limited to direct climate change activity e.g. reducing beach erosion and saving forests, or should the benefits accrue to the wider society e.g. stopping child labour and providing schools.



Day 3: Thursday 10th April 2008

Session 5: Stakeholders and their role in the climate change and tourism nexus

▪ *Knowledge Share Workshop 7*

Delegates were invited to assess what range of stakeholders should be involved in the adaptation consultation / implementation process

Stakeholders to Involve in a Tourism Sector Adaptation Process.

Government

Ministry of Tourism

Ministries responsible for Agriculture (Forestry, Fisheries) , Health, Energy, Transport, Environment, Social Affairs, Law, Waste, Culture & Heritage, Finance & Economy, Planning, Communication, Parks & Wildlife, Water, Science etc.

Local / regional government.

Meteorology Departments.

Emergency Planning Departments

Private Sector/Business

Local, regional national, international Tour Operators.

Travel Agencies.

Building and construction groups.

Architects.

Hotels and other accommodation groups.

Restaurant and other service/hospitality groups.

Car rental companies (taxi businesses).

Airlines.

Train and bus companies.

Carbon–offset companies.

Chamber of Commerce.

Utility companies (water, sewage, power, etc)

Attraction and activity businesses (golf courses, dive companies etc).

Manufacturing businesses.



Tour guides.

Local food suppliers.

Insurance companies and other financial groups (e.g. banks).

Event organisers.

Non-business / Non-government Organizations

International / national funding bodies (e.g. World Bank, IIED, Charities).

International / national Wildlife, Conservation, Environmental, Culture and Heritage groups.

Local development groups.

Indigenous (and migrant) communities

Local associations (e.g. Environment, Culture, Heritage Associations)

Religious groups

Disaster and rescue Groups (Red Cross, Local rescue organisations)

Advocacy organisations.

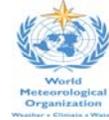
Farmer/fisher associations.

Universities / educational establishments.

Local Chiefs/leaders

- ***The Tour Operator's Role and Actions; James Whittingham, TUI Travel PLC (Appendix 20)***

James Whittingham detailed his role as Environment Manager within the new structure of TUI Travel PLC and identified how the company envisages taking a lead on climate change in the tourism sector. The company is now one of the largest global tour operators and its customer base has indicated that they would be keen to participate in tourism with a low environmental impacts and high social benefits. TUI Travel PLC have developed some case study projects in responsible tourism, carbon management and new product development, including their 'World Care Fund' encompassing a Travel Foundations fund and a Climate care fund, which collected £1 million in customer contributions offered on an 'opt-out basis, in its first year of operation. These funds have supported projects such as tree planting in Sri Lanka and the development of micro-hydro systems in Zambia. In addition they have conducted energy audits of their 'holiday villages' in several regions and reduced energy consumption; they are reviewing activities offered in destinations to promote sustainable excursions and sustainable transport options; and developing new low energy building design initiatives.



- **Knowledge Share Workshop 8**

Delegates were invited to think about the role of tour operators in climate change activity.

How do you think Tour Operators can help to build capacity in both destinations and in tourism professionals (e.g. tourism ministry colleagues) to help tourism adapt to climate change?

- Provide feedback on tourist attitudes to climate change so that destinations and tourism professionals can make changes as necessary.
- Take a lead in providing tour packages to support climate change impacts and adaptations.
- Take a lead in developing and marketing carbon neutral tourism products.
- Work more closely with sustainable tourism destinations.
- Plough some profits into sustainable projects.
- Promote sustainable businesses and provide incentive schemes.
- Help to mobilize funds for climate change adaptation and mitigation activities.
- Educate clients about sustainable practices.
- Influence supply chains by sensitising tourists and destinations.
- Take a lead in research and development e.g. through identifying new market interests or new products.
- Be proactive in changing consumer behaviour through education and awareness-raising.
- Be proactive in designing sustainable tourism products.
- Identify specific problems and issues in destinations and focus on these for development.
- Ensure adequate stakeholder engagement with regard to climate change issues.
- Invest funds donated from their customers in specific project and locations; build relationships with local communities, examine their role in a wider community context.
- Provide incentives to consumers to support sustainable development projects.
- Help build capacity for change in other stakeholders in the tourism sector e.g. consumers, businesses, and governments.
- Provide technical and other assistance and support to hotels etc to assist with climate change mitigation activities e.g. energy-efficiency reviews, guidelines etc.
- Ensure they are proactive in the carbon offset market and its regulation.
- Use their unique ability to represent and communicate with both consumers and destinations.



- Travel and tour operators can have a big impact on the climate change debate, not only on tourism but on other sectors, if they take a lead.
- TUI Travel PLC appears to be a strong role model for the sector – they need to use their market position to promote good practice both in the source markets and in the destinations.

- ***The Scientist’s Role and Actions, Dr. Stephan Harrison, University of Exeter/University of Oxford (Appendix 21).***

Dr Harrison identified the role of scientists in the climate change debate, beyond the production of scientific data. These included: communicating the science, communicating uncertainty, providing expert advice and opinion when the objective data was not available or obvious, providing due diligence cover for commercial decisions and help to develop risk management protocols informed by science. Their role in communicating is through publications, personal communication e.g. through conferences etc. The media communicates science but their reporting is often biased. Uncertainties in the science of climate change influence the predictive abilities of science modelling tools and this uncertainty must be communicated to wider audiences. Risk management and due diligence involves risk assessment and analysis in order to ensure commercial ventures take appropriate precautions in light of the climate change science. Science can inform management of socio-cultural, political and economic risks of climate change but it needs to be communicated in a form that is able to be understood by non-scientists.

- ***Knowledge Share Workshop 9***

Science communication

This was an open session. The major comments were that scientists were perceived of as being poor communicators, uneasy at having to communicate their data to a non-scientific audience. There needed to be a network of communication between scientists, the media and other wider audiences. Dr Harrison noted that science communication was about the simplification of science without it being over-simplified. It is not a case of ‘dumbing down’. Communication also involves using the language of your audience – there is a political language as well as a public language and a sector-specific language. He pointed out that the climate change debate accelerated with the publication of the Stern Report; as it was published with a view to its political and economic audience.



Dr Scott noted that many scientists were able to communicate their work to a wide audience, speaking the language of the public and of business to provide information in a useable form. For example, the UV index for sun screen protection was produced by scientists from the World Health Organisation to aid peoples' understanding of sun protection factors. However, it was not always the role of scientists to take scientific information to a wider audience; the scientists do not always know the ultimate audience for their work and do not have access to this audience e.g. local businesses and communities. Also, scientists need to know what information it is that communities or others need. They cannot be expected to produce and interpret data and information in a vacuum. It has to be a two-way process.

Dr Dodman also noted that communication is a two way process. In the case of policy-makers, they are not always aware of what scientists need in order to do the job expected of them. Scientists are often not on steering committees for funding programmes and projects and so cannot influence their direction. They are just seen as data and information providers; 'policy-making is often too important to be left to policy-makers'.

Dr Bowden-Kerby concluded that communication had to be dictated by the target audience; in order to inform, you need to know what the audience wants/needs/expects. There is a need for teachers and communicators with vision to pass on important information. One of the problems with communication in climate change is that of uncertainty associated with it. It is harder to communicate the uncertainty than the facts. Another aspect is to communicate the likely implications of any action or inaction.

- ***Communicating in the Climate Change Process; Mario Bravo, Senior Development Communications Officer, World Bank (Appendix 22)***

Mario Bravo summarized the approaches used by the World Bank in their communication strategies. He identified reasons for any communication: to inform, to persuade, to mobilize and to involve or empower, and also the need to set objectives for any communication process, by identifying the audience and the knowledge, behaviour or attitude that the communication was aiming to influence. The message format is important as are the channels used to reach the audience. Equally important is to evaluate the relative success of the communication and provide feedback for response. Finally a communication strategy cannot be an add-on activity but is integral to the success of any project.



▪ **Knowledge Share Workshop 10**

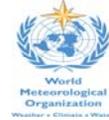
Delegates with scientific backgrounds were asked to provide an overview of communication problems they had experienced as scientists working within the climate change and tourism sector.

I. Mahmoud El-kassouni, Environmental Advisor to Ministry, Ministry of Tourism, Egypt

Mr El-kassouni detailed his role of advisor with a special interest in ecotourism and noted the first communication issue related to queries as to what is ecotourism. He also noted the wide variety of tourism sectors in Egypt from sun, sea and sand tourism to the Nile delta and desert tourism. He related his experience of a communication problem he had about environmental damage to an important oasis area, on which he tried to get action from senior government personnel, with little success. In the end he went to a national newspaper and asked for their assistance in raising the issue. This received an immediate response with ministerial visits to the site followed by an immediate implementation of his recommendations. A major outcome was to revert back to traditional building techniques which were able to withstand the desert environments, to provide comfortable accommodation for locals and tourists, and replace the use of concrete construction materials which required e.g. air-conditioning units to make them comfortable to live in, and roads for their transportation.

II. Earliston Mcphee, Director: Sustainable Tourism Planning, Bahamas Ministry of Tourism, Bahamas

Mr Mcphee discussed the role of communication in education and community involvement in the Bahamas, whereby the month of April was formally set aside as 'coastal engagement' month. Cross-sector engagement and communication included awareness raising activities, teaching teachers to communicate climate change to students and therefore through the school system to influence the wide community. In addition a similar approach was used with local religious leaders who have influence over local communities. Both of these communication actors have influence especially over young people within the community who are the ones who need to take these messages forward.



III. Bernardo Peredov, Researcher Ecotourism/Indigenous Communities, Oxford University UK & Bolivia

Mr Peredov has experience of working with indigenous communities in the context of ecotourism. Community-based tourism started as a conservation strategy involving NGO's and regional institutions and it formed a bridge between conservation and development in terms of poverty alleviation and development policy. The indigenous communities with which he is involved have few alternatives with regard to their land use and economic survival – tourism or agriculture. They do have rich natural and cultural attractions which tourists seek and they have become increasingly active in marketing their own eco-ventures and eco-lodges. Through initial internal communication from NGO's and others to the local communities about opportunities, there has been increased activity with regard to these communities communicating externally and directly with their source markets. They are aware that they cannot depend on external funding and so have to aim for a degree of self-sufficiency. There is less awareness of climate change in the region, and they are vulnerable to the impacts, but with a proactive communication strategy and their developing relationship with their markets, they will be able to maximise the potential of any new opportunities to secure their livelihoods as well as their environment.

- ***The Policy Research Environment of Climate Change in Developing Countries and SIDS; Dr David Dodman, International Institute for Environment and Development (IIED) (Appendix 23)***

Dr Dodman provided a background of the IIED and its work on mainstreaming climate change into its principle thematic activities: natural resources, human settlement, sustainable markets and governance. He detailed the objectives of the IIED Climate Changes group and its activities in less developed countries and communities. He noted that climate change had previously been seen as solely an environmental issue involving changes over the long-term changes, whereas now it was as much a development issue demanding changes over a shorter timescale. Dr Dodman identified the main challenges from a policy perspective: lack of awareness in e.g. governments, media, NGO's and public; the lack of mainstreaming into wider policies; juggling multiple priorities; low levels of capacity in many less developed countries; issues with funding. He provided a summary of the way forward for IIED – to provide robust methodologies with the aim of building capacity and ensuring vulnerable communities can adapt to a wide range of circumstances over time; to encourage sharing of knowledge and



experience, to expedite international funding and to ensure development proceeds which accommodates the risks and impacts of climate change.

Knowledge Share Workshop 11

How can IIED (or similar organisations) provide support for dealing with these challenges?

What are the main information gaps in addressing climate change in the tourism sector?

How can IIED (or similar organisations) help to fill these gaps?

- Funding for capacity-building and human resource development
- Research and development especially in relation to agriculture: more efficient methods of production; technical solutions to improve the quality of produce; more efficient distribution systems.
- To provide training in the above.
- To facilitate the process of bringing together stakeholders from across different sectors and agencies both local and international.
- Build capacity in the tourism sector.
- Encourage ministerial-level coordination to make better decisions and to plan and implement policy.
- Provide knowledge sharing opportunities: local, regional national international.
- Facilitate networks across regions and beyond.
- Provide guidance on best practice
- Provide funding themselves and also information about other sources of funding and how to access it.
- Highlight the importance of adaptation and mitigation at government levels.
- Push participatory decision-making through bottom-up approaches.
- Ensure transparency in funding and management.
- Promote integration between sectors and institutions e.g. working on climate change, development and tourism.
- Promote provision of relevant sector and scale knowledge.
- Address lack of political will and financial resources.
- Address training and information needs.
- Identify successful models and ensure knowledge is shared across regional or sectoral networks.
- Promote working on early warning and disaster management system – damage prevention or minimisation is vital.
- Provide consultancy and practical aid.



- Identify wider activities e.g. offsetting opportunities, and how these can be disseminated.
- Assistance with specific information needs e.g. regional scale data.
- Strengthen wider infrastructure to make communities and governments more resilient.
- Support capacity-building for politicians so they are able to provide strong leadership and good governance.
- Provide assistance to develop lobbying skills.
- Ensure information is available and accessible.

Session 6: Financing and Summing Up

- ***Financing Adaptation and Mitigation for Climate Change and Tourism in Developing Countries and Small Island Developing States: UNEP / UNWTO / Dr. Murray Simpson / Dr Ulric Trotz / Dr. Daniel Scott / Dr. Stefan Gossling***

There was a short discussion about financing for adaptation and mitigation, as these were issues that had been much discussed through the preceding days. From the perspective of many delegates, financial support was lacking. Earlston Mcphee noted that there were funds for adaptation strategies but these did not support for example moves in the Caribbean towards marketing itself as a carbon-neutral destinations, as this was viewed as a mitigation activity. The processes of adaptation and mitigation should be mutually supportive and supported. Gabor Vereczi noted that it was not always a case of more funds being needed, but that the available funds were better managed, more targeted and easier to access.

- ***Challenges Ahead: Dr Stefanos Fotiou, UNEP (Appendix 24)***

Dr Fotiou summarized some of the main challenges that had been identified through the workshop:

- Effective policy-making
- Build capacity
- Financial systems to support adaptation and mitigation activities
- Reduce knowledge gaps
- Address vulnerability hotspots
- Multidisciplinary working



Historically, economic success and profit maximisation was paramount. However, these new circumstances demanded a paradigm shift in institutional and business culture, along the lines of previous political, economic, societal and technological paradigm shifts and that major drivers were needed to facilitate such radical change. New responses were needed.

Adaptation is a process which less developed countries and SIDS needed to actively pursue, whilst mitigation is a process which the developed world had to address. Within this, there was balance to be found between adaptation and mitigation, to enable reductions in energy use and ensure resilience in the face of climate change. Dr Fotiou noted that governments needed to be encouraged to act on climate change and UNEP saw this as its role, building capacity for change within the tourist sector, and others.

- ***Close of Seminar.***

After the delegates had completed evaluation forms (Appendix 25) Dr Stefanos Fotiou, Luigi Cabrini, and Dr Murray Simpson brought the proceedings to a close. They thanked the delegates and the speakers for what had been a highly interactive seminar. They have also mentioned that the participants' evaluation forms would be used to inform and improve the planned regional capacity-building seminars which are anticipated to follow this initial event. The delegates were asked to participate beyond the seminar programme itself through a series of follow-up activities involving writing up case-studies and concept papers (Appendix 26) based on their own experiences in their own regions, which will inform subsequent seminars, and which will be published as a post seminar booklet under the auspices of UNEP, Oxford University, UNWTO and WMO.

- ***Conclusion***

The seminar highlighted the high level of adaptation and mitigation activities already being carried out in many regions of the world, often without being specifically labelled as such. The delegates noted many gaps in the provision of data and information on climate change and climate change impacts, particularly at regional and local levels. They also noted the lack of financial support and political will to take things forward and the need for networks to enable dissemination of good practice and the sharing of knowledge and practical experience. Skills shortages and poor legal provision and enforcement was also a barrier to developing adaptation policies. Identification of stakeholders and their inclusion throughout decision-making process was highlighted as being important in order to engage all those with an interest in the climate change and



tourism arena. Support in building capacity to initiate change and to lobby for funding and other assistance was also requested. Multidisciplinary and multi-sectoral working has to be encouraged in order to strengthen both the input into decision-making for adaptation and mitigation and the outcomes – the umbrella term ‘transdisciplinarity’ might be useful, being a concept denoting a unity of knowledge beyond disciplines and sectors.

Based on all participants’ recommendations and evaluations on the Seminar the organizers are starting to build partnerships at national and regional levels to develop a series of capacity buildings seminars to strengthen the capacity of professionals to understand and respond effectively to the global challenges of climate change in tourism destinations. The organisers trust that the requests for follow-up case studies and concept papers will be met to bring to proceedings to their full conclusion.



References

Gossling, S., Hall M., Lane B., Weaver, D., 2008. 'The Helsingborg Statement on Sustainable Tourism'. *Journal of Sustainable Tourism*: 16 (1):122–124

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.

<http://www.unep.fr/pc/tourism/library/DTIx1047xPA-ClimateChange.pdf>

UNEP 2004 *Bali Strategic Plan for Technology Support and Capacity-building*

<http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf>

UNWTO 2007 *Davos Declaration*.

http://www.unep.fr/pc/tourism/documents/Davos_Declaration.pdf