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# **FORUM ON CITIES AND CLIMATE CHANGE: ADAPTATION & PLANNING RESPONSES**

**05 November 2007**

**Putrajaya Marriott Hotel**

## **Organisers:**

Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia  
Ministry of Natural Resources and Environment Malaysia (NRE)

Commission on Geoscience for Environmental Management of the International Union of  
Geological Science (IUGS-GEM)  
Geological Survey of Finland (GTK)

## **Rapporteur's Report**

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## **INTRODUCTION**

Cities are the main drivers of national development. Many are situated near coastal areas with high population density. Despite relatively greater prosperity enjoyed, the limitations and scarcity of available resources are typically critical problems faced by cities. The impacts of climate change will incur additional stressors to the existing situation, particularly to vulnerable groups and marginalised communities in cities, and sea level rise will affect existing infrastructures and future development of coastal cities. Adaptation to climate change and integration of these factors in planning processes are, therefore, crucial to ensure that cities remain as engines of growth to national development. This one-day Forum, jointly organised by the Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia and the Eastern Regional Organisation for Planning and Housing (EAROPH), in conjunction with the United Nations International Year of Planet Earth, aims to share the experiences of selected regions in formulating responses to adapt to climate change.

## **WELCOMING AND OPENING ADDRESS**

On behalf of Prof. Dr. Mazlin Mokhtar, Assoc. Prof. Dr. Joy Pereira welcomed the participants to the Forum on Cities and Climate Change held in conjunction with the International Symposium on Cities and Conservation: Partnerships Towards Sustainable Cities in celebration of the United Nations International Year of Planet Earth 2008. The forum serves as a dual platform; first to discuss Malaysia's national position on climate change, the country's initiatives and implementation of national strategies as well as state and local adaptive plans; and second to share Europe's experiences in adapting to climate change and the challenges faced in integrating adaptation into policy making. Dr. Joy stressed the importance of understanding climate change impacts and addressing them in the appropriate adaptation manner. She thanked the organisers for their support.

In his opening address, Dr. Lian Kok Fei, Undersecretary of the Conservation and Environmental Management Division in the Ministry of Natural Resources and Environment, extended a warm welcome to forum participants and expressed his appreciation to the event's organisers. Dr. Lian noted that today's era is dominated by urbanisation and the key to adapting to climate change is to be able to sustain our current lifestyle without deleterious effects. The forum addresses in particular the adaptation of cities as they are typically located in coastal areas with high population densities thus making them highly vulnerable to the effects of climate change. Adaptation is crucial to ensure cities remain as engines of growth and development. The adverse impacts of climate change have already been observed in low-lying countries such as Bangladesh, and these badly-affected countries usually lack the capacity to attend to these impacts. Malaysia is in the midst of developing a national policy to address climate change. Dr. Lian conceded that although at present, there are already many sectoral policies addressing climate change, these sectoral policies should be consolidated into one national policy. Malaysia is also preparing the 2<sup>nd</sup> National Communications to the UNFCCC, and has created two support groups to specifically address climate change projections and socioeconomic impacts. He expressed hope that the forum will assist Malaysia in preparing, planning and adapting for climate change in the years to come, and declared the forum officially open to celebrate the International Year of Planet Earth 2008.

## **SESSION ONE: CLIMATE CHANGE – MALAYSIAN INITIATIVES**

*Chaired by Assoc. Prof. Dr. Joy Jacqueline Pereira, LESTARI, UKM*

### **Paper One: Development of Climate Change Policy and Strategies**

*Presented by En. Azhar Noraini, Deputy Undersecretary, Conservation and Environment Management Department, NRE*

The presentation commenced with a brief overview of the causes of greenhouse effect, an observation of the rising global temperature over the decades, and a quick discussion on the climate change impacts. Malaysia acknowledges that climate change affects us all and will require immediate action within our respective capacities. On this note, En. Azhar underlined the mitigation and adaptation approaches and programs undertaken in the 9<sup>th</sup> Malaysia Plan, in conjunction with Malaysia's 2020 vision to improve the quality of life, promote environmental protection and explore sustainable resources. These programs include renewable energy projects, CDM projects, ongoing implementation of a coastline protection program and flood mitigation programs (i.e. the completed SMART tunnel project).

As part of the 9<sup>th</sup> Malaysia Plan, a policy study on climate change is being conducted by LESTARI, UKM with the parallel objective of developing Malaysia's National Policy on climate change. This policy study aims to establish our national position at the UNFCCC and Kyoto Protocol, facilitate the incorporation of future climate risks and adaptation efforts into policy making, and to strengthen the institutional framework for inter-agency collaborations in climate change initiatives. Preliminary review of UNFCCC and KP documents have earmarked COP/MOP decisions and identified ten main issues of importance to Malaysia. En. Azhar also listed other climate change related activities conducted by the Ministry of Natural Resources and Environment, such as the ongoing 2<sup>nd</sup> National Communications Project (to be completed by 2009) and the National Capacity Self Assessment Project (to be completed by July 2008) under the UNDP-GEF. The NCSA project aims to table a Plan of Action to the Cabinet, which will allow ministries to identify and implement a Plan of Action under this project.

### **Paper Two: Vulnerability and Adaptation Initiatives on Climate Change**

*Presented by Ir. Dr. Salmah Zakaria, Chair of V&A WG2, NC2, NAHRIM*

The Stern Review and the 4<sup>th</sup> IPCC Report both concluded that climate change will significantly affect Asia with the changes in temperature and precipitation, and the increasing onslaught of extreme events. However, for such a large continent, there lack sufficient reports on climate change impacts as most studies have been concentrated in China and India. Additionally, Asian countries do not yet have appropriate adaptation program in place. Dr. Salmah outlined the current water scenario in Malaysia, highlighting the high expenditure on flood damage, RM 100 million/yr in 1982 has risen up to RM 3 billion/yr in 2003.

Malaysia's primary V&A initiatives include the preparation of the Initial National Communication, conducting climate change projections, and the preparation of the 2<sup>nd</sup> National Communication. The INC was successful in compiling the national GHG inventory and identifying climate change impacts by sectors. The INC recommended several adaptation strategies to be adopted by the agriculture, forestry, water resources, coastal resources, and energy sectors. The Climate Change Projection project undertaken by NAHRIM estimated surface temperature, annual rainfall, sea level rise, and river flows. These projections will be reviewed with other GCM models and downscaled further for increased confidence. The NC2 aims to further integrate climate change issues into the national and local strategic,

development and action plans. And to this end, two additional support groups, Climate Change Projections and Socio-economic Impacts & Responses, were created.

In her conclusion, Dr. Salmah encourages the audience to think about the next step following the completion of NC2, and how Malaysia should proceed after developing the appropriate adaptation policies, adding that adaptation in Malaysia is still largely in the planning rather than implementation stage. She also suggested for the central agencies, such as EPU, Treasury, ICU to collaborate with NRE as the liaison group for future adaptation programs as the presence of a central agency will provide check and balance to these programs.

## **Discussion**

1. Is there a need for national climate change policy in Malaysia? *[En. Azhar Noraini]*
2. Incorporation of a continuous review process of the implementation of climate change related actions according to 9<sup>th</sup> Malaysia plan.
  - Recommend that the ongoing policy study should provide a framework of implementation on methods to implement adaptation policies and measures in various sectors. For example, the shift of rainfall will affect agriculture, how do we then approach labor movement issues? This has to be translated into economic terms to be captured into policies. Emphasised that adaptation efforts should not be included in the peripheral, but rather in the core, and to be made mandatory, considering the importance of this issue. *[Dr. Salmah Zakaria]*
  - Incorporation of adaptation plans in current policies will be difficult. It is more advisable to have a separate sustainable development policy that covers all sectors, and is headed by a central agency, which will help to take the focus off individual ministries. *[En. Azhar Noraini]*
3. Public awareness and acceptance of climate change and its impacts on the population.
  - How much is the fact of climate change accepted within the Malaysian population? Observation has shown that even countries with appropriate laws and programs in place fail to be effective in all areas if climate change is not accepted within population. This could be an important issue in facilitating climate change adaptation strategies. *[Dr. Philipp Schmidt-Thome]*
  - Malaysia's Prime Minister and the scientific community views this issue seriously, and Malaysia is increasingly becoming an active participant in discussing this issue. Local newspaper and media has also helped to create increasing public awareness on climate change related issues – especially with coverage on recent floods and drought events within the country. *[Dr. Salmah Zakaria]*
  - The public, and in fact even stakeholders have little knowledge of what the government is doing to adapt to climate change. There has to be a national policy and strategy to institutionalise climate change related actions in the government's decision-making process. Public awareness should be high on the agenda. *[Dr. Halimatun Saadiah Hashim]*

## **SESSION TWO: CLIMATE CHANGE ADAPTATION – THE BALTIC SEA EXPERIENCE**

*Chaired by En. Azman Zainal Abidin, Deputy Director Policy Analysis & Research Management Division, PTM*

### **Paper One: Regional Development Projects Focusing on Climate Change**

*Presented by Dr. Phillip Schmidt-Thome, Geological Survey, Finland*

Dr. Schmidt first expressed his appreciation at being invited to participate in the forum, and hoped that sharing his experiences and thoughts developed on projects in the Baltic Sea region will be beneficial to Malaysia. He outlined the challenges of communicating and common understanding of a problem between the practitioners and scientists and explored how the science-stakeholder communication processes can be structured. He provided examples of practical approaches to adaptation in the Baltic Sea region and their achievements. The audience was introduced to the SEAREG Decision Support Frame that facilitated the communication flow on climate change impacts throughout Dr. Schmidt's projects. He further encouraged the audience to consider the type of information actually required by municipalities and communities, and to compare that against the type of information the scientific community is capable of providing.

He observed that extreme events were very successful in communicating the significance of economic effects of climate change impacts, but that there is still a growing trend in Europe to convert summer housing (typically the coastline) to permanent residential housing despite the flood potential. In the case of Gdansk, climate change projections indicated an increase in rainfall which could lead to higher lake discharge causing lakeside and cityside floods, and this had to be addressed more immediately than the flooding potential of coastal areas. Other examples of adaptation efforts included the embankment around the Baltic Arena stadium in Gdansk to raise the area above flood-prone heights; building regulations in Espoo have set the minimum level to be at 3m above sea level; and certain raised "islands" will be developed for residential locations in the flood-prone regions of Espoo. In comparison with flash floods in Asia which cost lives and sweeps away infrastructures, floods in Europe are regarded as more of an economic problem as seawater inundates the land for several days before receding.

Apart from floods, other potential climate change effects include the degradation of water quality due to algal growth bloom from the warming climate; and insignificant increase of summer precipitation coupled with rising temperatures could mean more water shortages in the summer months. An important point of consideration would be the cost/benefits of adaptation plans – how much of this investment will pay back in the future? Dr. Schmidt explained that the cost/benefits of adaptation are country-specific as there are regions of low-populated coastal areas that do not require much investment for climate change protection yet, and will undoubtedly provide little or no return on investments. Therefore, climate change projections and risks have to be thoroughly investigated to ensure that firstly, such an adaptation investment is needed immediately; secondly, if adaptation is required, it could possibly be more cost-effective to incorporate such efforts into the initial design compared to later efforts to prevent against flooding or other climate change effects.

## **Paper Two: Communicative Planning Approach Applied in the Context of Climate Change**

*Presented by Kaisa Schmidt-Thome, Helsinki University of Technology, Finland*

Kaisa Schmidt introduced the communicative planning approach successfully used in several European studies. This revolutionary approach which enlists a multi-disciplinary group of planners and scientists endeavours to incorporate the end-users of knowledge right from the start severely contrasted with the traditional bureaucratic-rationalistic-technical approach where typically the planner alone models everything. In Gdansk, the biggest challenge was the lack of initial planning interest, and this was only overcome when a hazard map was generated to show flood-prone areas that could affect stakeholders. Vulnerability to climate change was discussed by sectors and areas – What is at stake? What can be damaged? What are the coping capacities of the area? This type of interactive discussion helps to create a need for more knowledge from various sectors and from the stakeholders and planners involved. She reminded the audience that it was essential to be able to trace the information and details of decisions as it passes through the levels because this helps the team to understand the rationale behind certain decisions or imposed limitations, and these multidisciplinary discussions provide such opportunities. She also gave the example of the Malaren Flood Group in Stockholm which carried out “flood exercises” to assess vulnerabilities and identify gaps, as well as ensuring all required participants were involved in discussion and planning

### **Discussion**

1. Why development is still being carried out in areas highly at risk of climate change impacts?
  - Transparency is crucial for any decision-making process. Malaysia is no exception, but the reality is quite different. We still continue to carry out development in flood plains, etc even though we are already aware of the dangers and risks of doing so. *[En. Azman]*
  - Taking Finland and Germany as examples for comparison, Finland has a very rational approach in the economics of developing climate change-impacted areas. If an area is expected to be very affected, development of the area is disregarded. On the other hand, Germany has a more political investment in wanting to develop areas even if they might be climate change-impacted. Countries will not invest in adaptation planning / sustainable development if there is no stress on the necessity to do so. Certain adaptation issues can probably be pushed through if these are more publicly accepted issues. *[Dr. Schmidt]*
  - There is invested interest in development of Germany’s coastline. Presumably, more importance is being placed on providing local job opportunities and etc rather than avoiding potential climate change-impacted areas. *[Kaisa Schmidt]*
  
2. Environmental and social impacts of adapting to climate change effects.
  - The earthfill to raise ground levels (for adaptation in flood-prone areas) are taken from hills. Malaysia experiences heavy siltation, and excavation of earthfill could significantly impact river systems, right down to the river mouth. How was this resolved in the Baltic Sea region? The new building/development regulations could mean higher costs of housing. If this is the case, where do the lower income population (those who cannot afford to live in these higher-costing embankment areas) live? Do they have no other choice but to live in the more vulnerable areas? Are there any NGOs speaking up against these decisions there? *[Kairiah Talha]*

3. The role of the urban planner in integrating adaptation to climate change within the town planning.
- Urban planners are not a highly explored/promoted field/career. Yet they theoretically play a major role in adaptation planning and development of stakeholders' interests. Realistically, planners continue to submit development plans for stakeholders without placing much value on adaptation actions, and these are continually approved. It is only when one feels directly affected or vulnerable, only do they begin to take action. However, there is a steadily growing number in the Malaysian private sector slowly becoming aware of the hazards of climate change and realising how this will affect them. But this number is currently very small with a very slow growth rate. People in practice, hardly ever get together for sharing of information with the scientific community. Research institutions' findings are not shared and made readily aware to the planners or the public. Recommend creating network organisations that will keep the planners informed on the CC issues and impacts. Personal experience as an urban planner with sufficient communication and interaction with diverse groups and expertise was very helpful. [*Khairiah Talha*]

### **SESSION THREE: INTEGRATING DISASTER RISK REDUCTION INTO DEVELOPMENT PLANS – EUROPEAN PERSPECTIVE**

*Chaired by En. Asfaazam Kasbani, Programme Manager UNDP Malaysia*

The chairperson briefly introduced the four topics relating to climate change that were the subjects of discussion at the recent UNDP conference – mitigation, adaptation, financing climate change impacts, and technology transfer initiatives. These topics will be further discussed at COP13, Bali in December 2007.

#### **Paper One: Placing the ESPON Hazards Project and its Achievements in a Broader Frame**

*Presented by Kaisa Schmidt-Thome, Helsinki University of Technology, Finland*

Kaisa Schmidt began by positioning herself as an ESPON contact and gave a brief introduction to the origins of the ESPON Hazards Project. Prior to ESPON, the EU was already observing a “creeping competence” in many policy fields; the EU was competent in regional policies; but was lacking competency in the field of spatial planning, which encompassed urban and regional planning, and any planning with direct land-use implications. This lack of competency in spatial planning was mainly due to land-use management still being tightly controlled at the regional level. Historically, there have been severe differences in regional development, and this is apparent in income differences between underdeveloped and overdeveloped regions. The European Spatial Development Perspective (ESDP) which was already available at the time consisted of non-binding documents based on commitment and informal cooperation by its member states. Thus ESDP formulated the idea of monitoring spatial development and networking researchers, and ESPON was conceived. ESPON currently has 25 member states, and serves to advise policy makers.

## **Paper Two: Integration of Hazard and Risk Maps into European Regional Development Plans**

*Presented by Dr. Phillip Schmidt-Thome, Geological Survey, Finland*

Using the example of ESPON 1.3.1 Hazards Program, Dr. Schmidt summarised the process and criteria in which hazards were identified and mapped. The first step is to accurately differentiate between natural hazards (defined as having clear start and end dates, such as avalanche, volcanic eruptions, flood, etc) and hazardous processes (i.e erosion, desertification, water shortages, etc). Categorisation of spatially relevant natural hazards indicated hydrometeorological hazards, with the exception of landslides, were affected by climate change, while geohazards remained unaffected.

Challenges in creating hazard and risk maps for the entire European continent included inconsistency of data sets across different regions of the continent; lack of information sharing within the European scientific community; differing definitions of vulnerability (i.e. GDP/capita, population density, etc); lack of data to cover all areas of vulnerability; preoccupation of policy makers as to where hazards “should” occur based on intuitive opinions, media coverage, and financial importance of identified areas. The Delphi method was used to weigh hazards, but the process was difficult because of unequal importance and significance of hazards and associated risks. For example, London with its higher population density and GDP/capita would be considered more vulnerable compared to other European regions. Generated hazard maps showed a general increase in vulnerability from the western to eastern regions of Europe, and this mostly likely relates to population density.

Dr. Schmidt also briefly touched on the potential impacts of climate change on public health particularly as a result of the changes in living environment. Spread of vector borne diseases to regions previously unexposed to such diseases could be expected. On the other hand, graphs of daily mortality age 65-74 in relation to temperatures (in London, Finland, Greece) were shown to prove the ability of humans to adapt to climate change.

### **Discussion**

1. Acceptance and selection of data in climate-related hazard assessments.
  - Policy makers tend to accept results which they find acceptable when assessing climate-related hazards. How was this handled in Europe? How do we foresee this issue in Malaysia? *[Dr. Joy Pereira]*
  - Scientists should only redo data if there are improvements or changes in the data sets and information available, and not for the purpose of satisfying policy makers. It is advisable to make scientific data and methods used as transparent and available as possible. It is likely that one will face a lot of political debate and demands when trying to develop a risk map as local authorities usually feel the need to declare their respective states/areas as “flood prone” to get their share of funds for flood allocations (i.e. European Regional Development funds). Therefore, it is important to clearly identify which hazards to map, and why these hazards in particular were selected. *[Dr. Schmidt]*
  - Feedback received from regional planners indicate them wanting scientists to identify the hazards and hazard-prone areas, but to then leave the decision making and planning to the planners. *[Kaisa Schmidt]*



2. Integration and acceptance of adaptation to climate change into socio-economic planning.
- How does EU/Finland integrate climate change issues into socio-economic planning? Instead of using vulnerability assessment, can we integrate this into SEA? What is the level of acceptance at the various levels of government – is there any institutional acceptance of the ESPON study? How many private/governmental sectors' planning practitioners were involved in the ESPON study? *[Dr. Halimaton]*
  - In the ESPON projects, the team consisted of equal numbers of planning practitioners and scientists. Private sector practitioners were only interviewed but were not partners in the project. Project results have been discussed openly at the EU level; and although these “green papers” are non-binding, but they could contribute to future directives and can contribute to bringing adaptation plans into the mainstream thought and consideration. *[Kaisa Schmidt]*
  - Now there is more funds to support and develop research projects related to climate change in the EU. However, spatial planning remains strongly within the national responsibilities rather than at the EU level. The SEA deals more with points of climate change impacts than assessing vulnerabilities. It is recommended to generate maps of potential climate change impacts first, and then to compare these with regional development plans to see its feasibility and cost/benefits before further developing vulnerability maps. If the region has high climate change impacts, but is underdeveloped, there is considerably less vulnerability. It is observed that large companies are starting to get more involved in climate change and vulnerability assessments, but at present not the middle/smaller companies because adaptation measures implemented by private sectors are not subsidised. *[Dr. Schmidt]*
  - Congratulated the two speakers for sharing their experiences on how to incorporate adaptation to climate change in town planning. In Malaysia, this movement is still in the foetal stage. Hopefully, after this session, NAHRIM especially, will be able to understand the V&A assessment process – what is required of this process, how cities will be affected, and to have these incorporated into future town planning. *[Ms. Siow Suan Neo]*
  - Communication is important, but prior to that it is necessary to identify who are the key players and stakeholders; and also to find a common area to interface with each other and allow sharing of information. It is necessary to understand everyone's personal agenda. In Malaysia, many ministries/departments are so compartmentalised that many groups end up being overlooked. *[Khairiah Talha]*
  - Support for adaptation to climate change in town planning is very much personalised, and one has to start by garnering the support of politicians/authorities with a personal interest in climate change through networking efforts. So far there does not exist an institutionalised method of addressing climate change hazards in development plans. *[Dr. Schmidt]*
  - In the Espoo case, adaptation efforts included setting a building requirement of elevation of 3m above sea level. Why this system used instead of the sea walls as in the Netherlands? *[Dr. Halimaton]*
  - Finnish coast varies greatly from the Netherlands coast. Netherlands is a case of a country with 50% below sea level and has significant land reclamation projects. Initially there was a proposal to give some of the reclaimed land back to the sea, but public rejection was too high. Economic investments of sea walls are high and are typically not undertaken by coastal countries as it requires a significant coastal management plan with substantial financial backing to successfully use a system such as in the Netherlands. In New Orleans, during Hurricane Katrina, the system

- in use which was designed to drain water from the Mississippi (and not from the ocean) in cases of flooding obviously failed to keep sea water from intruding. *[Dr. Schmidt]*
- There are also situations whereby water is flowing in both directions (to and from the sea) which may complicate the use of coastal management systems. *[Kaisa Schmidt]*
3. Resources involved (i.e, manpower, time, cost) in developing hazard maps. *[Lim Hin Fui, FRIM]*
    - The overall project received approximately 420,000 Euro to produce several outcomes including policy recommendations, handbooks, maps, etc. Due to the lack of time and resources to generate new data, existing data were used. *[Dr. Schmidt]*
  4. It was mentioned that it took approximately 2-3 years to get communication going (and also the lack of available data) in the European study. What were lessons learned that are applicable in Malaysia? *[Dr. Joy Pereira]*
    - At the beginning of the project, there was no understanding between natural, physical and social scientists. Later stages of the project showed lack of understanding between scientists and practitioners. Most important lesson is to try and understand the type of information each party requires, and equally important is to also try and discern the type of information that each party does not require to know. Knowing these makes it easier for the planner to approach the scientists with regards to the planners' needs, concerns and priorities. In Germany, there are social scientists sitting in on the planning committee to provide a more holistic approach. *[Dr. Schmidt]*
    - It is necessary to give scientists involved a crash course on planning to understand the reasons behind their agenda and what drives them; if there are any political influences. *[Kaisa Schmidt]*
  5. Relationship between earthquakes and climate related hazards.
    - Thus far, there has not been any publications that proves or observes tectonic activities (earthquakes, volcanic activities ) being impacted by climate change. *[Dr. Schmidt]*
  6. The influence of hazard/risk maps on EU funds allocation?
    - Even though hazard-prone areas will receive increased EU funding, on the flipside, wouldn't this mean insurance premiums would increase? How does this balance out? *[Dr. Joy Pereira]*
    - Agrees that these are two conflicting interests. There are areas that do not want to be identified as hazard-prone as this might decrease investments and tourism. However, there are significant enough cases of regions that want to be earmarked as hazard-prone to obtain EU funding. *[Dr. Schmidt]*
    - EU Regional Development tries to promote competitiveness among regions to enhance development efforts, which is why funding is so important and so highly prized. *[Kaisa Schmidt]*

**Rapporteur:**

Nur Azrina Azhar

Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia

## APPENDIX 1: PROGRAMME

### Forum on Cities and Climate Change: Adaptation and Planning Responses

The Marriott Putrajaya, 5 November 2007

8.30 – 9.00am	Registration
9.00 – 9.15am	<b>Welcoming Remarks</b> <i>Prof. Dr. Mazlin bin Mokhtar, Director Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia (UKM)</i>
	<b>Opening Address</b>  <i>Dr. Lian Kok Fei, Undersecretary Conservation and Environment Management Division Ministry of Natural Resources and Environment Malaysia</i>
9.15 – 10.45am	<b>Session 1: Climate Change – Malaysian Initiatives</b> <i>Chair: Assoc. Prof. Dr. Joy Jacqueline Pereira (LESTARI, UKM)</i>
	Development of Climate Change Policy and Strategies <i>Azhar Noraini, Deputy Undersecretary Conservation and Environment Management Division Ministry of Natural Resources and Environment Malaysia</i>
	Vulnerability and Adaptation Initiatives on Climate Change <i>Ir. Dr. Salmah Zakaria, Chair of Working Group II: Vulnerability and Adaptation, Second National Communication (NC2) National Hydraulic Research Institute of Malaysia</i>
10.45 – 11.00am	Break
11.00am – 1.00pm	<b>Session 2: Climate Change Adaptation – The Baltic Sea Experience</b> <i>Chair: Azman Zainal Abidin (Malaysia Energy Centre)</i>
	Regional Development Projects Focusing on Climate Change <i>Dr. Philipp Schmidt-Thome Geological Survey, Finland</i>
	Stakeholder Consultation Approaches and Actor Networks – Paving the Way for Local Climate Change Decision Making <i>Kaisa Schmidt-Thome Helsinki University of Technology, Finland</i>
1.00 – 2.00pm	Lunch
2.00 – 4.00pm	<b>Session 3: Integrating Disaster Risk Reduction into Development Plans – European Perspectives</b> <i>Chair: Asfaazam Kasbani (United Nations Development Programme Malaysia)</i>
	Implications of Climate Change on National and Regional Development Projects <i>Kaisa Schmidt-Thome Helsinki University of Technology, Finland</i>

Integration of Hazard and Risk Maps into European Regional Development  
Plans

*Dr. Philipp Schmidt-Thome*  
*Geological Survey, Finland*

4.00 – 4.30pm

Discussion

4.30 – 5.00pm

Closing and Refreshment

**APPENDIX 2: LIST OF SPEAKERS AND PARTICIPANTS**

No.	Name	Organisation
<b>Speakers</b>		
1.	Azhar Noraini	Kementerian Sumber Asli dan Alam Sekitar (NRE)
2.	Ir. Dr. Salmah Zakaria	Institut Penyelidikan Hidraulik Kebangsaan Malaysia (NAHRIM)
3.	Dr. Philip Schmidt-Thome	Geological Survey Finland
4.	Kaisa Schmidt-Thome	Helsinki University of Technology Finland
<b>Participants of the International Symposium on Cities and Conservation</b>		
1.	Azimin Samsul M. Tazilan	Universiti Kebangsaan Malaysia
2.	Datin Paduka Dr. Halimaton Saadiah Hashim	Universiti Kebangsaan Malaysia
3.	Raja Datuk Zaharatun Zainal Abidin	Universiti Kebangsaan Malaysia
4.	Hishahi Nirei	Ibaraki University
5.	Jose M. Sayago	Tucuman University, Argentina
6.	Kamariah Dola	Universiti Putra Malaysia
7.	Omid Reza Saadation	Universiti Putra Malaysia
8.	Farid Shah Riza Mohamed Johan	Jabatan Pengurusan Sisa Pepejal Negara
9.	Abdul Rahman Hamzah	Jabatan Perancangan Bandar dan Desa Semenanjung Malaysia (JPBD) Selangor
10.	Mohd Farabi Yussoff	Jabatan Perancangan Bandar dan Desa (JPBD)Semenanjung Malaysia
11.	Nazirah Mahmud	Jabatan Perancangan Bandar dan Desa (JPBD)Semenanjung Malaysia
12.	Nik Norhanah Nik Hassan	Jabatan Perancangan Bandar dan Desa (JPBD)Semenanjung Malaysia
13.	Rohani Md. Hashim	Jabatan Perancangan Bandar dan Desa (JPBD)Semenanjung Malaysia
14.	Rudzaimeir b. Malek	Dewan Bandaraya Kuching Utara
<b>Members of NC2–Socio-Economic Impacts and Responses Support Group</b>		
1.	Dr. Lian Kok Fei	Kementerian Sumber Asli dan Alam Sekitar (NRE)
2.	Asfaazam Kasbani	United Nations Development Programme (UNDP)
3.	Ir. Hj. Ahmad Jamalludin b. Shaaban	Institut Penyelidikan Hidraulik Kebangsaan Malaysia (NAHRIM)
4.	Muhammad Shukri b. Abdul Raman	Institut Penyelidikan Hidraulik Kebangsaan Malaysia (NAHRIM)
5.	Dr. Elizabeth Philip	Institut Penyelidikan Perhutanan Malaysia (FRIM)
6.	Dr. Lim Hin Fui	Institut Penyelidikan Perhutanan Malaysia (FRIM)
7.	Azman Zainal Abidin	Pusat Tenaga Malaysia (PTM)

8.	Radin Diana	Pusat Tenaga Malaysia (PTM)
9.	Dr. Mohd Zabawi Abdul Ghani	Institut Penyelidikan dan Kemajuan Pertanian Malaysia (MARDI)
10.	Engku Elini Engku Ariff	Institut Penyelidikan dan Kemajuan Pertanian Malaysia (MARDI)
11.	Siow Suan Neo	Jabatan Perancangan Bandar dan Desa (JPBD) Semenanjung Malaysia
12.	Dr. Joy Jacqueline Pereira	LESTARI, Universiti Kebangsaan Malaysia
13.	Dr. Abdul Hamid Jafaar	LESTARI, University Kebangsaan Malaysia
14.	Dr. Rawshan Ara Begum	LESTARI, University Kebangsaan Malaysia