

## Climatic Hazards Programme

# Dialogue on Climate Change 2022: Risks, Adaptation and Mitigation - Implications and Way Forward

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SEADPRI-Universiti Kebangsaan Malaysia

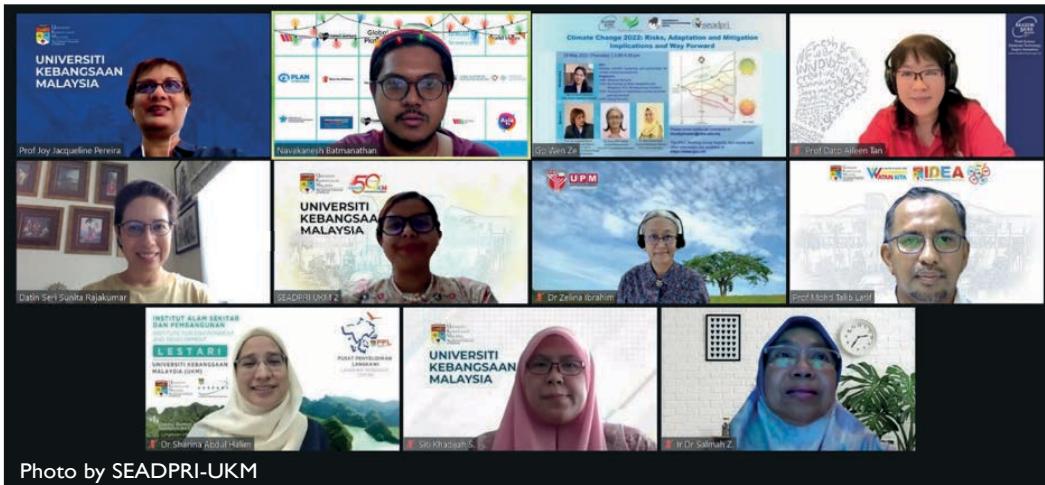


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The event was moderated by YBhg. Datin Seri Sunita Rajakumar, (second row, first left) and key findings of the IPCC were presented by three IPCC authors from Malaysia, namely Professor Dr. Joy Jacqueline Pereira (top row, first left), Associate Professor Dr. Zelina Zaiton Ibrahim (second row, second right); and Dr. Sharina Abdul Halim (bottom row, first left).

The Intergovernmental Panel on Climate Change (IPCC) has confirmed that humans have contributed to global warming of about  $1.1^{\circ}\text{C}$  since pre-industrial times. This has caused widespread changes to the atmosphere, natural ecosystems and the oceans. Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. In the worst case scenario should climate actions fail, global warming of  $1.5^{\circ}\text{C}$  will be exceeded in the next two decades. Malaysia can anticipate increased frequency and intensity of heavy rainfall and hazards associated with rainfall such as floods, flash floods, mudflows, landslides, of which all have already occurred in our country.

In conjunction with the most recent report produced by IPCC, a dialogue of key findings on “Climate Change 2022: Risks, Adaptation and Mitigation - Implications and Way Forward” was jointly convened by the Committee on Climate Change and Disaster Risk Reduction of the Academy of Sciences Malaysia; Climate Governance Malaysia (CGM); the Asian Network on Climate Science and Technology (ANSCT) and Southeast Asia Disaster Prevention Research Initiative-Universiti Kebangsaan Malaysia (SEADPRI-UKM); this event took place on 19 May 2022 at 3.00-4.30pm via Zoom platform. It was aimed to mobilize scientific leadership and partnerships for climate resilient development and enable the local scientists, corporate leaders and policy makers to be abreast of the IPCC’s latest findings. The discourse received great support from more than 90 participants who were representing the public and private universities, corporate sectors, private sectors, and non-government organizations.

The event began with the presentation of the most recent key findings of the IPCC reports, by three IPCC authors from Malaysia, Professor Dr. Joy Jacqueline Pereira of SEADPRI-UKM, as the Vice Chair, IPCC Working Group II Chair and ASM Committee on Climate Change and Disaster Risk Reduction; Associate Professor Dr. Zelina Zaiton Ibrahim from Universiti Putra Malaysia as the IPCC WG II Coordinating Lead Author; and Dr. Sharina Abdul Halim from Universiti Kebangsaan Malaysia, as the IPCC WG II Lead Author. The event was moderated by YBhg. Datin Seri Sunita Rajakumar, Chair of CGM.

Professor Joy first briefly spoke about the IPCC, the 6th Assessment Cycle and the report preparation process. This was followed by Dr. Zelina’s presentation on some of the global findings on warming projections, observed impacts, future risks including those that are irreversible, adaptation feasibility, and the new concept of climate resilient development; the process of integrating adaptation and mitigation. Dr. Sharina then spotlighted some observed and projected impacts, key risks and adaptation measures, as well as enabling conditions in multiple sectors relevant to Asia. New findings from WG I on reducing short-lived climate forcers (SLCFs) in cities that bring about direct health benefits to the urban population whilst contributing to reduction in greenhouse gas emissions (GHG) was highlighted by Professor Joy.

The findings of WG II which indicate that there are options for reducing GHG emissions in every sector was also underscored. The scientific evidence is clear; we are missing a narrowing window of opportunity to limit global warming to  $1.5^{\circ}\text{C}$ .

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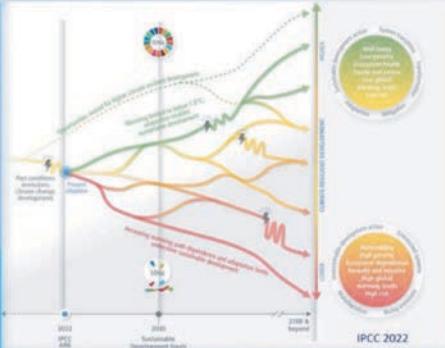
There were five panelists from the Academy of Sciences Malaysia (ASM) invited to share their views on the implications and issues of priority for the country, as well as the way forward. Prof. Dr. Fredolin Tanggang made an intervention on downscaling of global climate projections. In his view, policies and laws need to be formulated to steer the country towards climate-resilient pathways that can be applied at all levels, including state and local levels. Prof. Dr. Mohd Talib Latif shared his views on SLCFs and air pollution. According to him, Malaysia has the capacity to contribute data and support the methodology and guideline development of IPCC for reporting on SLCFs at the global level. Ir. Dr. Salmah Zakaria shared her views on water resources. She opined that target objectives need to be prioritized according to the country's needs and situation as the IPCC report targets global and regional levels. She also pointed out that the impacts of sea level rise need to properly evaluated for adaptation planning of coastal areas of Malaysia. Datuk Dr. Abdul Rahim Nik shared his thoughts on biodiversity and forests. According to him, the understanding of the interconnection is vital in formulating the strategies to achieve the co-benefits of mitigation and adaptation and achieve positive outcomes. Prof. Dato' Dr. Aileen Tan Shau Hwai provided her perspective on oceans and marine biodiversity. She lamented the slow pace and minimum focus of climate change research on marine ecosystems that is hindering progress on understanding of the processes and changes at the local level.

These changes have not only devastated the environment, but also impacted the food security. Climate education is essential in this context. The discussion session that was moderated by YBhg. Datin Seri Sunita Rajakumar pointed out the importance of climate governance. It was stressed that the directors in the corporate sectors have to take the lead in contributing and demonstrating their climate ambitions to steer the social systems towards achieving the SDG 13. It was also emphasized that carbon trading schemes have to carefully structured and monitored to ensure that it contributes to absolute emission reduction at the global level. The use of groundwater as a safe and alternate source of water resource is context and area specific; local scale information is required to support the decision-making process. It was proposed that ASM play a greater role in encouraging people to publish their research findings in peer reviewed and indexed journals. This is a way to get local innovation, practices and technology highlighted at the global level. The issue of data accessibility particularly science information that is restricted by data sharing regulations or rules was also highlighted. The event has served as a stepping stone for the ASM and the conveners to mobilize scientific leadership and partnership, and building of trust between the different disciplines to accelerate action for climate resilient development. It is hoped that the key findings of the IPCC will serve as an impetus for policy makers to recalibrate our country with more effective action for climate resilient development and sustainable development.



### Climate Change 2022: Risks, Adaptation and Mitigation Implications and Way Forward

19 May 2022 (Thursday) | 3.00-4.30 pm

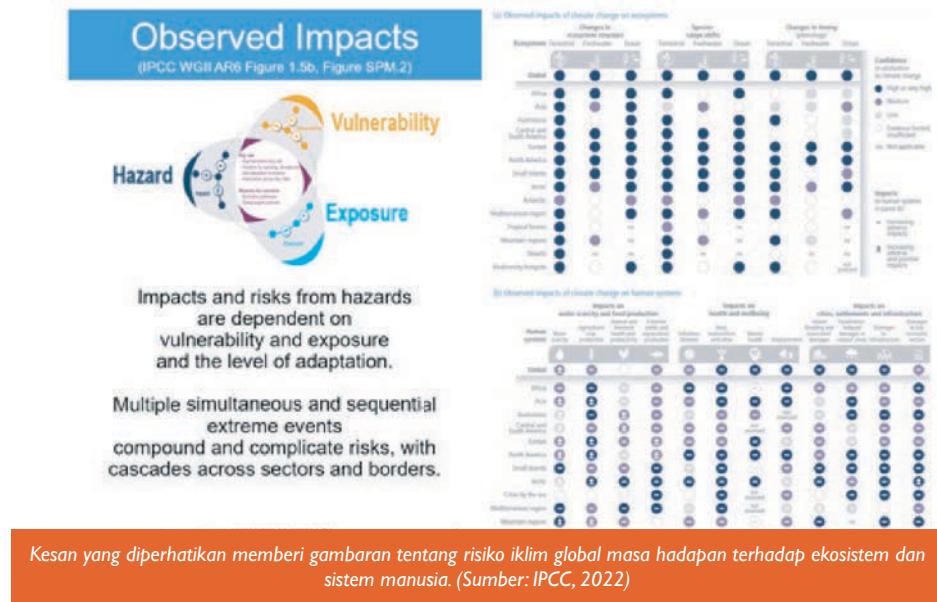
<b>Moderator</b>  <b>Datin Seri Sunita Rajakumar</b> <i>Chair, Climate Governance Malaysia</i>	<b>Aim:</b> Mobilise scientific leadership and partnerships for climate resilient development <b>Programme:</b> 1500: Welcome Remarks 1510: Key findings on Risks, Adaptation and Mitigation: IPCC Working Group II Authors 1550: Viewpoints on implications, country priorities and way forward 1630: Closing Remarks	 <b>Please email additional comments to:</b> <b>khadijahsatari@ukm.edu.my</b>
<b>Speakers</b>  <b>Prof. Joy Jacqueline Pereira</b> <i>Universiti Kebangsaan Malaysia Vice Chair, IPCC WG II Chair, ASM Committee on Climate Change and Disaster Risk Reduction</i>	 <b>Dr. Zelina Zalton Ibrahim</b> <i>Universiti Putra Malaysia IPCC WG II Coordinating Lead Author</i>	 <b>Dr. Sharina Abdul Halim</b> <i>Universiti Kebangsaan Malaysia IPCC WG II Lead Author</i>

The IPCC Working Group Reports, fact sheets and other information are available at:  
<https://www.ipcc.ch/>

Photo by SEADPRI-UKM

*The Committee on Climate Change and Disaster Risk Reduction of the Academy of Sciences Malaysia; Climate Governance Malaysia (CGM); the Asian Network on Climate Science and Technology (ANSCST) and Southeast Asia Disaster Prevention Research Initiative-Universiti Kebangsaan Malaysia (SEADPRI-UKM) have jointly convened a discourse on Climate Change 2022 on 19 May 2022, via Zoom platform with the highlights on IPCC's latest findings.*

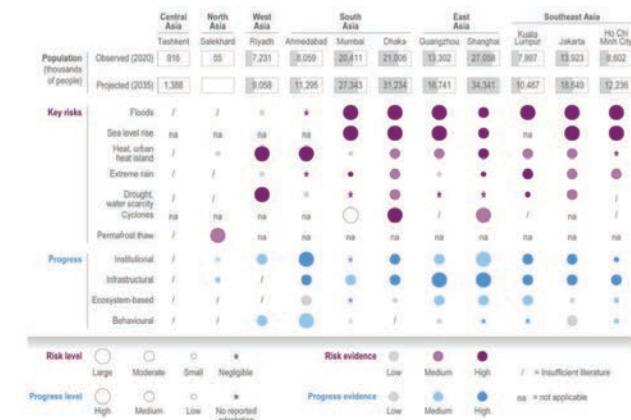
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Perubahan iklim telah memberi impak terhadap ekosistem daratan, air tawar dan lautan sama ada di peringkat global, serantau mahupun tempatan. Antara kesan yang ketara adalah pada struktur ekosistem, julat geografi spesis dan masa kitaran hidup bermusim (fenologi). Di rantau Asia, adalah nyata bahawa perubahan iklim mendatangkan kesan pada struktur ekosistem daratan (keyakinan tinggi), air tawar (keyakinan sederhana) dan lautan (keyakinan tinggi). Penilaian juga menunjukkan bahawa terdapat anjakan julat spesis di kawasan air tawar di rantau Asia dengan tahap keyakinan sederhana, diikuti oleh kawasan daratan dengan tahap keyakinan rendah; manakala bukti adalah terhad bagi ekosistem lautan. Namun demikian, ekosistem lautan dipercayai terjejas dari segi fenologinya dengan tahap keyakinan sederhana. Manakala, ekosistem daratan dan air tawar mencatatkan tahap keyakinan yang rendah.

Dari segi sistem manusia, keselamatan air dan pengeluaran makanan; kesihatan dan kesejahteraan; serta bandar, penempatan dan infrastruktur juga terkesan akibat dari perubahan iklim. Di rantau Asia, kesan buruk perubahan iklim telah diperhatikan terhadap kekurangan air (keyakinan sederhana) dan pertanian atau pengeluaran tanaman (keyakinan tinggi). Sementara itu, sektor perikanan, haiwan dan ternakan akan mengalami peningkatan kesan buruk terhadap produktiviti dengan keyakinan sederhana hingga rendah akibat daripada perubahan iklim. Kesan buruk yang semakin meningkat terhadap kesihatan dan kesejahteraan juga diperhatikan terutamanya disebabkan oleh haba, kekurangan zat makanan, kesihatan mental dan perpindahan (keyakinan tinggi) serta penyakit berjangkit (keyakinan sederhana).

Tambahan pula, penduduk di rantau Asia juga akan mengalami kesan buruk yang semakin meningkat ke atas bandar, penempatan dan infrastruktur akibat daripada kerosakan yang disebabkan oleh banjir/ribut di kawasan pantai seperti kenaikan paras laut dan lonjakan ribut (keyakinan tinggi), kerosakan kepada infrastruktur dan sektor ekonomi utama (tahap sederhana) dan banjir pedalaman dan kerosakan yang berkaitan seperti limpahan sungai, hujan lebat dan banjir bandar (keyakinan rendah). Secara keseluruhan, bahaya kesan dan risiko adalah bergantung kepada kelemahan dan pendedahan serta tahap adaptasi. Pelbagai kejadian serentak yang melampau dan berurutan menghasilkan serta merumitkan risiko, dengan merentasi sektor dan sempadan.



Risiko utama dan pilihan adaptasi di bandar terpilih di seluruh Asia. (Sumber: IPCC, 2022)

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Di rantau Asia Tenggara, banjir dan kenaikan paras laut adalah antara risiko utama yang dikenalpasti. Namun demikian, kenaikan paras laut tidak berkaitan di Kuala Lumpur. Bandaraya Kuala Lumpur, Jakarta dan Ho Chi Minh mengalami tahap risiko sederhana untuk kejadian panas dan hujan yang melampau; kecuali kesan haba/ fenomena pulau haba bandar ke atas Ho Chi Minh adalah tidak ketara. Kuala Lumpur mempunyai kejadian hujan yang tinggi dan risiko rendah dalam menghadapi kemarau dan kekurangan air. Sebaliknya, tahap risiko kemarau dan kekurangan air di Jakarta adalah sederhana. Risiko utama khususnya taufan tidak dititikberatkan bagi bandar-bandar di Asia Tenggara kerana kajian dan penerbitan saintifik yang tidak mencukupi.

Kuala Lumpur dan Jakarta mempunyai tahap kemajuan sederhana dalam institusi dan infrastruktur dari segi adaptasi. Manakala bandar Ho Chi Minh adalah agak ketinggalan dalam dua aspek ini. Kuala Lumpur juga mencatatkan tahap kemajuan yang lebih tinggi dari segi adaptasi berdasarkan ekosistem. Walau bagaimanapun, tiada kajian saintifik dilaporkan mengenai adaptasi dari segi tingkah laku di bandar Kuala Lumpur. Tahap perkembangan adaptasi berdasarkan ekosistem juga diperhatikan adalah lebih perlahan di Ho Chi Minh dan Jakarta. Seterusnya, tahap kemajuan untuk adaptasi dari segi tingkah laku di Jakarta dan Bandaraya Ho Chi Minh adalah sederhana hingga rendah. Pembangunan berdaya tahan iklim merupakan proses melaksanakan mitigasi dan adaptasi secara bersama dalam menyokong pembangunan mampan untuk semua. Menurut laporan terbaru IPCC, tindakan seluruh dunia untuk mencapai pembangunan berdaya tahan iklim adalah lebih mendesak daripada yang dinilai sebelum ini. Setiap tindakan, pilihan dan keputusan yang dibuat adalah penting kerana setiap daripadanya akan membawa kita jauh dari, atau ke arah dunia mampan yang berdaya tahan terhadap perubahan iklim.

Justeru itu, rangka kerja penyelesaian untuk pembangunan berdaya tahan iklim perlu dipertimbangkan oleh pihak kerajaan dan semua lapisan masyarakat. Ia juga harus melibatkan semua orang dalam membentuk perkongsian (partnership) dan menggunakan pengetahuan yang luas sama ada saintifik, pengetahuan asli, tempatan atau praktikal. Selain itu, usaha memelihara dan memulihara ekosistem juga harus diperlakukan dan keterlibatan kumpulan terpinggir harus diperkuahkan. Antara aspek lain bagi rangka kerja penyelesaian untuk pembangunan berdaya tahan iklim adalah seperti mengutamakan kesaksamaan dan keadilan; menyelaraskan minat, nilai dan pandangan dunia yang berbeza; dan meningkatkan pelaburan serta kerjasama antarabangsa. Prospek untuk pembangunan berdaya tahan iklim akan menjadi lebih terhad jika pemanasan melebihi  $1.5^{\circ}\text{C}$  dan ia mungkin tidak tercapai jika tahap pemanasan melebihi  $2^{\circ}\text{C}$ .



Rangka kerja penyelesaian untuk pembangunan berdaya tahan iklim.  
(Sumber: IPCC, 2022)

