

# UMS to play vital role in managing regional climate centre

**KOTA KINABALU:** The Regional Climate and Atmospheric Data Centre (RCADC), a project funded by the Asia-Pacific Network (APN) for Global Change Research, is supported by existing facilities at the faculty of Science and Natural Resources, Universiti Malaysia Sabah (UMS).

By consolidating local expertise within this region and sharing existing resources, especially computing and modelling resources, the RCADC will serve as a platform to support the management of regional climate and atmospheric datasets useful for understanding the future climate of the region and its impacts, particularly in terms of regional air quality, as well as providing feedback concerning exposure and vulnerabilities within the Southeast Asian region.

In the future, scientific information from the RCADC will be made accessible to research communities, stakeholders, and other parties who are interested in the outcomes of the research project. Through the APN funded project on Climate Change, Biomass Burning and Biogenic Emission Impact on Surface ozone and Particulate Matter in Southeast Asia, the RCADC will provide high resolution climate change projections, improved regional biomass and biogenic emissions inventories, regional biogenic emission fluxes and air quality simulations.

The main focus of this project is to investigate the impact of climate change, biomass emission, and biogenic emission on regional air quality, specifically surface ozone and particulate matter.

This project involves collaborative research from experts within

Southeast Asia, headed by Assoc. Prof Dr Justin Sentian, an expert in climate change and atmospheric chemistry from UMS. Other local collaborative members include Dr Carolyn Melissa and Dr Wilson Wong from UMS and Dr Mohd Sharul Mohd Nadzir (UKM).

Regional collaborators include the National Astronomical Institute Thailand (NARIT Thailand), King Mongkhut's Institute of Technology Ladkrabang (Thailand), the University of Palangkaraya (Indonesia), the Institute of Technology Bandung (Indonesia), and the University of the Philippines Diliman (Philippines).

In Southeast Asia, understanding future climate impacts on air quality and its feedback on exposure and vulnerability is crucial, particularly in terms of human health.

Additionally, the region's economies are highly dependent on natural resources utilisation, including widespread conversion of forests to agricultural use and extreme trans-boundary air pollution. The output of this project will provide significant information for policy makers to formulate or strengthen clear policies related to a number of intricate issues such as greenhouse gases (GHGs) emissions and climate change; biogenic emissions and landcover changes; biomass emissions and forest fires; and air quality and health.

The outcomes of these policies can be translated into strategy and action plans, and eventually specific programmes and activities.

This project also supports national sustainable goals by formulating strategies and action plans to be implemented and monitored efficiently, alongside

actions related to mainstreaming mitigation and adaptation of climate change impacts into the local planning and policy development process. In the recent third Regional Project Meeting and Workshop in Chiang Mai, Thailand, Assoc Prof Dr Justin Sentian (UMS) stated that the effects of climate change, biomass burning emissions from forest fire and natural biogenic emissions from vegetation are known to affect regional surface ozone and particulate matter. Unfortunately, how these effects respond to a changing climate is poorly understood, particularly in Southeast Asia.

Thus, the collaborative nature of this project among various countries will provide a platform for the convergence of scientific knowledge to gain an understanding of how these changes in climate and emission factors will affect atmospheric chemistry and subsequently air pollution in the region.

In the next two years, a series of workshops and training seminars will be carried out in each collaborating country, serving as platforms of communication and outreach strategies for stakeholders and research collaborators.

Specific topics linked to the project will be highlighted, discussed and elaborated upon as training for participants, including the scientific community and relevant government departments from each host country. Communication among stakeholders within collaborating countries with regards to the research collaboration project at all stage of execution is vital to ensure that direction of the project is heading towards its project goals and objectives.