

Why Malaysia has a stake in preserving Antarctica — Wan Mohd Rauhan Wan Hussin



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MAY 28 — Antarctica and Malaysia are as opposite as one can imagine. The icy continent is located at the southernmost point on Earth's surface, encircled by the vast and rough Southern Ocean while Malaysia lies smack in the equatorial region.

But surprisingly, the White Continent's polar climate has direct implications for a tropical region such as Malaysia. It is important to understand the connections between Antarctica and Malaysia in terms of climate change which is causing the ice in the Antarctic to melt.

The global sea level rise due to the melting ice poses a serious threat to low-lying coastal areas including Malaysia. The Intergovernmental Panel on Climate Change (IPCC) has identified Antarctic ice melt as a major driver of future sea level rise.

For Malaysia, this may potentially cause more severe flooding, coastal erosion, and saltwater intrusion which could have devastating impact on coastal communities, agriculture and freshwater resources.

It should be no surprise then that Antarctic research has grown in interest among Malaysian researchers in order to understand and mitigate the impacts of climate change.

International research has been ongoing in Antarctica to understand the dynamics of Antarctica's climate and its implications for sea level rise.

Malaysian researchers have also contributed to this scientific effort to understand the behaviour of subglacial rivers and lakes and their influence on Antarctic ice melting.

This information is vital for developing effective coastal management strategies and climate adaptation plans in Malaysia, ensuring the protection of vulnerable areas and communities.

Antarctica also holds vital clues to the intricate processes of our planet and it is often described as a natural laboratory.

The Southern Ocean is home to diverse species that form the foundation of the marine food web. Changes in sea ice extent and ocean temperatures directly affect these species, influencing their distribution and abundance.

This ocean that encircles Antarctica is the most powerful carbon sink and absorbs about 30 percent of human-caused carbon dioxide output. The destruction of the Antarctic ecosystem and biodiversity will reduce its ability to capture carbon, hence increasing the Earth's temperature.

Malaysian researchers contribute significantly to studying Antarctic biodiversity by monitoring key species and assessing the impacts of climate change on these populations.

One crucial area of research is the study of blue carbon, especially in the marine environments that support carbon sequestration, such as seabed habitat. By understanding how Antarctic benthic (seabed) communities capture and store carbon, scientists can better appreciate the role of these ecosystems in mitigating climate change.

This research not only enhances our knowledge of Antarctic ecosystems but informs conservation strategies that can be applied to similar environments in Malaysia.

Malaysia acutely realises the importance of Antarctica in regulating Earth's climate as well as the importance of a collective effort to preserve Antarctica. In 1999, Malaysia initiated its Antarctic Research Programme which then led to Malaysia's first involvement in Antarctic research through a collaborative scientific expedition with New Zealand.

Three years later, the National Antarctic Research Centre was established to coordinate the research and researchers from various local universities. The inauguration of the Sultan Mizan Antarctica Research Foundation in July 2012, marked Malaysia's commitment to advance scientific works in this hostile yet important continent.

The involvement of Malaysia in Antarctic research is relatively recent and for now, it is accepted as a non-consultative member of the Antarctic Treaty. This status limits Malaysia's role in decision-making processes.

Being accepted as a consultative member will fulfil Malaysia's aspiration to play a greater role in safeguarding the environment through Antarctic and climate change research. To achieve this, Malaysia must first show its commitment to Antarctic research, especially through sustained funding and the involvement of various stakeholders to support this agenda.

This aspiration reflects Malaysia's dedication to safeguarding the Earth from the adverse impacts of climate change. Malaysia is among the 196 countries that ratified the Paris Agreement with the main objective being keeping the rise in mean global temperature below 1.5 degrees Celsius above pre-industrial levels.

Malaysia's decision to ratify the agreement is praiseworthy as this means Malaysia is committed to an effort to minimise the rising temperature.

Likewise, monitoring Antarctica's characteristics is equally important in tackling climate issues. Among the targets of the Paris Agreement is to slow or stop the onset of Antarctic Ice Sheet loss and its effect on increasing sea levels.

The majority of the surface of this continent is in the form of the Antarctic Ice Sheet, a vast contiguous mass of glacial ice. The Antarctic Ice Sheet contains around 70 percent of the Earth's freshwater. This immense ice mass helps regulate global temperatures by reflecting solar radiation back into space.

However, rising global temperatures are causing the Antarctic ice sheets to melt at an accelerating rate, contributing to sea level rise. As Antarctica is encircled by the Antarctic Circumpolar Current, the world's strongest ocean current, the heat from rising temperatures may be distributed around the planet, affecting weather and climate systems worldwide.

The melting of the entire Antarctic ice sheet is projected to contribute to the rise of sea level to almost a catastrophic 60 metres. This may seem unthinkable but the melting ice sheet in West Antarctica, which could cause an almost six-metre sea level rise, is relatively possible.

The marine-based West Antarctic Ice Sheet is considered vulnerable to irreversible collapse under future climate trajectories and its tipping point may lie within the mitigated warming scenarios of 1.5 degrees Celsius to 2 degrees Celsius of the United Nations Paris Agreement.

Considering the grave impacts Antarctica may pose should there be no preventive and mitigation measures, the need for Malaysia to commit to preserving Antarctica's nature is well justified. Malaysians, too, are involved in various activities leading to a warming Earth. — Creative Commons by 360info

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