Malaysia’s activities and achievements in Antarctic research and diplomacy

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Introduction

Malaysia is extremely honoured to be part of the 43rd Antarctic Treaty Consultative Meeting (ATCM) in Paris, France. This meeting marks the tenth (10th) time whereby Malaysia makes its presence at this prestigious meeting since being a member of the Antarctic Treaty System (ATS) in 2011. Malaysia is also pleased to share the progress of its activities and achievements in its Antarctic research and diplomacy.

Progress

To date, the Sultan Mizan Antarctic Research Foundation (SMARF), which was established in July 2012 has disbursed and awarded:

* 30 Research Grants to Malaysian scientists;
* 12 Fellowships to young Malaysian scientists; and
* 11 Antarctic Berth Support to Malaysian scientists.

These awards are in line with the Foundation’s objective to promote scientific research programmes in the Polar regions and to provide as well as manage funding for research grants, post-graduate studies and fellowship in scientific research in the Polar regions among Malaysian scientists. Other than providing research grants, fellowship and berth support, the Foundation continues to undertake awareness programmes to promote the importance of the Antarctic among school children and Malaysian public. The programmes include Antarctica exhibitions, sharing sessions with polar scientists, and various contests.

Malaysia also participated in the 2019 Annual General Meeting (AGM) and Special Meeting of the Asian Forum on Polar Sciences (AFOPS) which was held in Tachikawa, Japan from 30th October- 1st November 2019. The meeting deliberated on several items including expedition and operational plan, research highlights, cooperation between other international organizations and AFOPS, cooperative projects and research collaboration. Through AFOPS, a Malaysian scientist benefited from Korea Polar Research Institute (KOPRI) Antarctic Science Fellowship Program in 2020 and he is expected to undertake his field work at KOPRI research station in 2020/2021 summer season. However, due to the COVID-19 pandemic, the expedition was postponed to the next season. In 2020-2021, all AFOPS physical meetings have been cancelled and have taken place virtually, including Business Meeting 2020 and Science Symposium which was held on 3rd -4th March 2021.

The Chairmanship of AFOPS has officially been handed over to Malaysia on 1 November 2020. The term of Chairmanship is for two years (2021-2022). The next AGM to be chaired by Malaysia is expected to be held virtually in October 2021.

During the 2019/2020 summer season, five (5) Malaysian scientists carried out field works in the Antarctic as part of their research activities at the following facilities:

* Field research at the Chilean facilities in Antarctica;
* Field research at the United Kingdom facilities in Antarctica; and
* Field research at the Korean facilities in Antarctica.

Field research at the Chilean facilities in Antarctica

Two (2) postgraduate students from Malaysia visited and carried out field work at the Bernardo O’Higgins Station in Antarctica. Their visit this time was a continuation of their supervisor’s field work from the previous summer season and was made possible under the collaboration between Universidad de Magallanes, Chile and Centro de Investigación y Monitoreo Medio Ambiental Antártico (CIMAA). Malaysia would like to thank Chile for the opportunity given to these students to work at the Chilean facilities in Antarctica. The collaborative project that our students worked on was:

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| --- | --- | --- | --- |
| **Scientist/Student** | **Research Title** | **Date** | **Station** |
| Nur Nadhirah Zakaria | Second Stage of Bioreactor Design for Cold-adapted Bioremediation of Antarctic Soils Contaminated with Diesel Hydrocarbons | 24 Jan 2020 – 10 Mar 2020 | Bernardo O’Higgins |
| Ahmad Fareez Ahmad Roslee |

Field research at the British Antarctic Survey facilities in Antarctica

One (1) Malaysian researcher visited and carried out field work at the Signy station in Antarctica. Her visit was made possible through the collaboration between the Foundation and British Antarctic Survey (BAS) through the renewed Memorandum of Understanding between both parties for another five (5) years (2019-2024). During this field work, she collected some plant samples for identification at the station while soil samples collected will be couriered to Malaysia for further analysis. Malaysia would like to thank United Kingdom for the opportunity given to these scientists to work at the British Antarctic Survey facilities in Antarctica. The collaborative project that our researcher worked on was:

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| **Scientist/Researcher** | **Research Title** | **Date** | **Station** |
| Dr. Nur Alia Johari | Molecular Evaluation of Biogeography and Functional Redundancy Theory in Antarctic Rhizosphere Prokaryotic Communities | 13 Nov 2019 – 7 Mar 2020 | Signy |

**Field research at the Korean Polar Institute facilities in Antarctica**

Two (2) scientists from Malaysia visited and carried out field work at the King Sejong Station in Antarctica. Interestingly, one of them also received the KOPRI Antarctic Science Fellowship 2019 while the other scientist was offered the slot for the expedition by KOPRI with their team of scientists who were undertaking a similar research on penguins. The following year, he applied for KOPRI Antarctic Science Fellowship 2020 and was awarded the fellowship to conduct another expedition in 2021. Malaysia would like to thank Korea for the opportunity given to these scientists to work at the KOPRI facilities in Antarctica. The collaborative projects that our scientists worked on were:

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| **Scientist** | **Research Title** | **Date** | **Station** |
| Dr. Heo Chong Chin | Necrobiome Community Structure and Soil Chemistry Profile Associated with Penguin Carcasses and its Correlation with Bone Density under Antarctica Climate | 16 Dec 2019 – 16 Jan 2020 | King Sejong |
| Dr. Ahmad Riduan Ahmad | Characteristic of Lightning Flashes over Antarctica Peninsular and its Respond to the Upper Atmosphere | 1 Jan 2020 – 4 Feb 2020 |

***Diplomacy & Collaboration***

Malaysia is also honoured to inform at this meeting that it will be organising its Ninth (9th) Malaysian International Seminar on Antarctica (MISA9) from 25th –27th October 2021, carrying the theme of “Polar Regions in Our Climate Crisis.” This theme, particularly for Malaysia, is in-line with the rational that the poles are an integral part of the global earth system and the processes and changes in the polar regions will influence the tropics and vice-versa. MISA is a biennial event that gathers scientists from different countries to share findings and experiences in polar research and provide platform to strengthen existing and forge new collaborations. MISA also provides opportunities for local scientists and students who are interested in pursuing their career in polar sciences, especially global sciences. In conjunction with MISA9, there will be one (1) Scientific Committee on Antarctic Research (SCAR) supported workshop on “Tropic Antarctic Teleconnections (TATE).”

Malaysia, through SMARF, was accepted as an Observer of Council of Managers of National Antarctic Program (COMNAP) in 2017 and was invited to attend the XXXI COMNAP AGM on 28th – 31st July 2019 in Plovdiv, Bulgaria. However, in 2020, due to the COVID-19 pandemic, the XXXII COMNAP AGM was held virtually on 3rd August 2020 hosted by the University of Canterbury, Christchurch, New Zealand. The current XXXIII COMNAP AGM will be held virtually on 14th July 2021.

As a member of the Scientific Committee on Antarctic Research (SCAR), Malaysia attended the Open Science Conference which was conducted virtually from 3rd – 7th August 2020 and the XXXVI SCAR Delegates’ Meeting which was held virtually in a series of sessions over two weeks from 16th – 25th March 2021.

In view of expanding its international collaboration on Antarctic science, Malaysia, through SMARF, and Ukraine’s State Institution National Antarctic Scientific Centre have agreed to sign a Memorandum of Understanding in 2021 on the “Scientific and Technical Cooperation in Antarctic Research” for the purposes of establishing a framework for cooperation between both nations on the basis of equality and mutual benefit in the field of scientific, technical, and logistic cooperation in Antarctica.

***National Governance***

On the domestic front in relation to governance and legislation, in order to implement its international obligations under the Antarctic Treaty and Madrid Protocol, Malaysia is in the final stages of drafting its national legislation on Antarctica. The Antarctic Bill will be tabled in Parliament once the necessary legal scrubbing process concludes.

Conclusion

Malaysia looks forward to a continuous active engagement in the Antarctic Treaty development process.