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Strategic Interest of Malaysia's in Matters Concerning Policy on Antarctica

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Abstract

As members of the Antarctica Treaty 1959, Malaysia is aware of the stringent requirements in the Treaty Protocol on Environmental Protection 1991 (The Madrid protocol 1991). Malaysia is also aware of the weight on the economic factor as huge budgetary allocations needed to fund Malaysia's scientific research expeditions. Nevertheless, the membership resulted in the need to reconciliation local environmental policy to the Madrid Protocol 1991. This paper traces the development of Malaysian environmental policy pre and posts the signing of Antarctica Treaty, emphasizing the concept that affects the Malaysian policy in its attempt to compliment the Antarctica Environmental Protection Policy.

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1. Introduction

Malaysia acknowledges that the globalisation dictates the changes that are vital for future survival of communities. In accepting this, Malaysia identified that the knowledge-based economy is the way to secure Malaysia as a developed country in its Vision 2020. The main aim is to establish a progressive society who will be a

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contributor to the development of science and technology in the future. The focus on knowledge-based economy means that it is vital for the country to establish a greater interest in scientific research in order to compete in the borderless world. It is important for Malaysia to set up a network of international and local scientists for technology transfer in research activities in the biggest scientific laboratory – The Continent of Antarctica. The establishment of Malaysia Antarctica Research Program (MARP) is a big step towards the realisation of this goal. Apart from elevating Malaysian science research; the Programme is also invaluable in developing the human resource necessary to power a knowledge-based economy. Therefore, it is importance for Malaysia to establish a policy on transformation of Antarctica science discoveries into Malaysia Antarctica (Environmental Protection) Law. The propose research will emulate the Environmental Protection Policy established by German, a non-claimant of Antarctica, since the German Policy dictates similar expectation like Malaysia that Antarctica's pristine environment is a common heritage of mankind that need to be protected by the law of the State.

As such, the Programme aims to facilitate and coordinate Malaysian scientific effort in the areas of global sciences such as climate change and biodiversity. This is the niche areas being the relationship between the tropics and the poles. Encourage and foster efforts to develop the capability and capacity of Malaysian scientists to compete at international level via international networking. Promote and maintain Malaysia's presence as a significant player in Antarctic research to pave the way for Malaysia's entrance into the Antarctic Treaty System. Development of Malaysian research interest in the Antarctica was realised in 1997 when the Cabinet has approved the set up of a Malaysian Antarctic research programme. A bilateral scientific agreement with New Zealand helped to set up the logistics necessary for Malaysian scientists to launch research in Antarctica. The Malaysian-Antarctica Research Programme was set up under the auspice of the Academy of Sciences Malaysia (ASM) to coordinate researchers around the country to focus and establish world-class research in their institutions. To date, the Programme has accomplished to make Malaysia's scientific presence felt.

2. The interest begins with a humble inquiry

Malaysia's interest in Antarctica began when Malaysia and Antigua raised the issue of Antarctica and its governance and the right of the global community over its resources, at the United Nations in 1983. Question of Antarctica, Malaysia and Antigua had drawn attention to the issue of Antarctica's exclusivity to the developing nations and the need for Antarctica to be established as a global heritage for mankind in the United Nations General Assembly (UNGA) in 1983. It was a period of massive mineral exploitation of the deep seas by multinational companies from the developed nations. Dr Mahathir Mohamad, the Prime Minister then, contended that there are reasons to believe that a similar fate could befall Antarctica and measures should be undertaken to guarantee protection of Antarctica's environment from reckless pillaging of its natural resources. He also voiced that the Antarctic Treaty System (ATS) should be encouraged to open its door for developing countries to participate in the decision making regarding the Antarctica. Malaysia's position was that the less developed countries should have access to the wealth being exploited and that such territories be governed under a multilateral agreement administered by the United Nations. This results in the Question of Antarctica being tabled in the UN and the United Nations Environment Programme (UNEP) was given an observer status in the proceeding annual Antarctic Treaty System Consultative Meeting. The Question of Antarctica was presented annually at the UNGA from 1983-1992. After a year's recess in 1993, the Question of Antarctica has become a triennial endeavour at the UNGA.

Malaysia's stand on Antarctica in the United Nations has roused the interest of the member countries of the Antarctic Treaty Consultative Parties (ATCP), leading to the invitation of two Malaysian representatives to a Workshop on the Antarctic Treaty System in South Beardmore Station, Antarctica in 1985. The late Tan Sri Zain Azraai, Malaysia's permanent representative to the United Nations at that time and Tan Sri Datuk Dr Omar Abdul Rahman, the Scientific Advisor to the Prime Minister then, were sent to participate in the workshop. Although Tan Sri Datuk Dr. Omar had written a proposal to promote Malaysian research in the Antarctic after the workshop, it was another decade before it could come to fruition. At the international front, Malaysia continued to be an instrument to voice the concerns of the developing nations regarding the issue of Antarctica. Initially, the focus of the question raised by Malaysia revolves around the exclusivity and the unaccountability of the ATCP and for the ATS to adhere more closely to the UN charter as outlined by the treaty. A particular source of query was the establishment of the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) in 1988

that was deemed to be an attempt to ensure exclusive mineral development rights by the ATCPs. The 1990s saw Malaysia's interest the Antarctica centred on the issue of environmental protection and has abandoned any equitable mineral exploitation of the Antarctica. The Exxon-Valdez oil spill disaster in the Alaska illuminated the inherent dangers of exploiting the Antarctic's vast oil and gas as well as other mineral resources. Malaysia's stand was that mining in Antarctica was not compatible with the protection of its environment and that CRAMRA needs to be reviewed for the protection of the continent.

Malaysia also expressed apprehension that Antarctica's environment is under threat from unchecked scientific exploration of the continent. Visible and intense scientific presence is a must for any member country of the Antarctic Treaty, leading to overcrowding in some of the accessible, ice-free zones. Malaysia proposed the establishment of an international research station under the auspices of the United Nations and to set up an environmental impact assessment in order to minimise the environmental impact due to research activities. The Southern Ocean surrounding the Antarctica is rich with marine life and has been exploited by fishermen for over a century. Malaysia has urged the international community to scrutinise the substantial harvesting of krill off of the Antarctic coast that is threatening the sustainability of the Antarctic ecosystem. Illegal, unreported and unregulated (IUU) fishing of the Patagonian toothfish (also known as Chilean sea bass) as well as other marine organisms is also a matter of grave concern that needs to be addressed.

2.1. Malaysia strategic interest adopted at home

Thus, Malaysia's stand and efforts on the issues concerning the Antarctica is a reflection of Malaysia's commitment towards the protection and conservation of the global environment. The adoption of the Madrid Protocol in 1991 by the ATS has alleviated some of the concerns regarding the management of the Antarctic environment and helped to re-affirm Antarctica's status as a global heritage to be devoted to peace and science. Malaysia's instigation into the issue of Antarctica has drawn the interest of the Antarctic Treaty Consultative Party (ATCP) members culminating in an invitation to attend a workshop on the Antarctic Treaty System at South Beardmore Camp on Antarctica in January 1985. As the issue gathered momentum and interest among other countries increased, Malaysia continued to adopt a proactive stance on Antarctica. In January 1985, the late Tan Sri Zain Azraai who was then the permanent representative to the United Nation and Academician Tan Sri Datuk Dr Omar Abdul Rahman attended a workshop on the Antarctic Treaty System at South Beardmore Camp on Antarctica. Following the workshop, Dr. Omar proposed that a Malaysian research program on Antarctica be formed and means found to enable them to use the research centres in Antarctica. Due to various factors such as lack of logistic support, that proposal was not pursued.

2.2. Bilateral Scientific Cooperation with other jurisdiction

This changed when a bilateral scientific cooperation between Malaysia and New Zealand in 1996 was signed. Under the collaboration agreement, the New Zealand government offered logistics support as well as scientific collaboration. In 1997 at the invitation of the New Zealand government, a three-man delegation led by the Honourable Dato' Seri Ling Leong Sik, Minister of Transport, Malaysia made an official visit to Antarctica. Dato' Dr. Salleh Mohd Nor FASc represented the Academy of Sciences Malaysia (ASM) on that official visit. An offer was then made by the New Zealand Government to Malaysian scientists to participate in scientific research in Antarctica in collaboration with the New Zealand scientists. On November 19, 1997, the Malaysian Cabinet approved for Malaysia's involvement in scientific research in Antarctica. Following which the Malaysian Cabinet endorsed the setting up of a Malaysian Antarctic research programme in the areas of climate change and biodiversity in November 1997.

2.3. Malaysia Develop its Local Programme

The Academy of Sciences Malaysia (ASM) was given a mandate to set up a taskforce to oversee and coordinate the Malaysian Antarctic Research Programme (MARP), which is chaired by Datuk Dr Salleh Mohd Nor FASc, the Vice President of the ASM. Members of the Task Force are from the Ministry of Science, Technology and

Innovation, Ministry of Foreign Affairs, National Oceanographic Directorate, Malaysian Meteorological Service, University Malaya, Universiti Sains Malaysia, Universiti Kebangsaan Malaysia and Universiti Putra Malaysia. ASM is the focal point and serves as the secretariat to the programme. The National Technical Coordinator, Coordinator for Atmospheric Science and Coordinator for Biological Science provide the technical and scientific support of the task force.

ASM was given the task of organizing a research program on Antarctica. As a result, the first team of four Malaysian scientists from University Malaya left for Scott Base, Antarctica for two weeks from October 13th to 25th, 1999 to study “The long-range transport of biomass burning aerosols: characterization of particulates in the atmosphere”, thus initiating the start of the Malaysian Antarctic Research Program. Following this expedition, during the 2000-2003 summer seasons, 36 Malaysian scientists were sent for 18 scientific expeditions to Antarctica. To-date, there are more than 40 scientists and postgraduates students actively working in scientific research on Antarctica. These scientists and students come from various universities including University Malaya, University Sains Malaysia, University Kebangsaan Malaysia, University Putra Malaysia, Kolej Universiti Sains dan Teknologi Malaysia, International Medical University and Multimedia University.

MARP is funded under the 8th Malaysian Plan (2000-2005) with an allocation of RM 10 million to initiate and set up Malaysian research in the Antarctica. It aims to develop resilient and innovative researchers to cultivate world-class scientific research capacity. In 2002, The Malaysian Antarctica Research Centre was established. It is located in University Malaya as a centre to coordinate the research activities of the members of the Programme. The Antarctica Program receives full support of the Malaysian Government and it is a project in the Eight Malaysian Plan for 2001-2005 with a confirmed allocation of fund.

3. New strategic interest is towards becoming a key player in Antarctica

Malaysia’s significant and enthusiastic contribution in Antarctic scientific research has led to the ATCPs to invite Malaysia to attend the 25th Antarctic Treaty Consultative Meeting (ATCM) in Warsaw, Poland in 2002. The unprecedented invitation to view the proceeding was considered a watershed in the Malaysia- ATCP relationship as there is no clause in the ATS to admit non-acceding members. Malaysia’s presence in the ATCM meeting has instigated United Kingdom to propose a position paper to be considered by the ATCM on how to tackle the presence of non-acceding member countries to participate in the ATCM forum meeting. Since then, Malaysia has been invited to observe the annual ATCM meeting in Madrid in 2003 and Cape Town in 2004 and was given the opportunity to give an informal brief to the delegates in Warsaw and Madrid. Antarctica is a significant platform for the protection of the global environment as well as resource management and development. The next logical step for Malaysia to be a key player in this agenda is to apply to become an ATCP member country. As a member of the ATCP, Malaysia will have greater weight and say in the development of policies for the Antarctica that will be of national, as well as global benefit.

3.1. Developing more international cooperation

MARP has gained the cooperation of various international and national bodies involved in Antarctic research to aid the development of its plans. The first such collaboration was with Antarctica New Zealand upon the signing of the Memorandum of Understanding (MoU) with the New Zealand Government back in 1997. Cooperation with national Antarctic research bodies from countries with a long history of Antarctic research is invaluable. They help provide logistic supports as well as insights and the scientific partnership to help Malaysian scientists gain a foothold in the field. The following is a list of national Antarctic research bodies working together with MARP are: Antarctica New Zealand (ANZ); Australian Antarctic Division (AAD); Instituto Antarctica Argentino (IAA); South Africa National Antarctic Program (SANAP); British Antarctic Survey (BAS); Korea Polar Research Institute (KOPRI) and National Centre for Antarctic and Ocean Research, India (MAITRI station). Scientific endeavour at the scale of Antarctic research is made possible by the cooperation of various research groups that form a cooperative entity to coordinate and structure the work. The commitment and efforts of MARP have garnered Malaysia an Associate Membership of the Scientific Committee of Antarctic Research (SCAR) at the 28th SCAR Meeting at Bremerhaven in 2004. This is indeed an honour as SCAR is charged with the initiation; promotion and coordination

of scientific research in Antarctica as well as providing independent scientific advice to the Antarctic Treaty System (ATS). MARP has also been invited to become a consultative member of the Joint Committee on Antarctic Data Management (JCADM), an arm of SCAR responsible for the collation and dissemination of scientific information gathered by all research under SCAR.

4. More expeditions to Antarctica

Antarctic research is made possible by numerous expeditions by Malaysian scientists to the frozen continent. The various research groups were hosted at Casey Station (courtesy of AAD), Scott Base (courtesy of ANZ) and MAITRI Station (courtesy of National Centre for Antarctic and Ocean Research). The first Malaysian scientific expedition was launched in October 1999 to look into trans-boundary air pollution research, initiating Malaysia's scientific adventure in Antarctica. Each expedition was invaluable in the amount of data and samples collected for further analysis. The results of the expeditions are reflected in the scientific output of each research group. During the 2000-2005 summer seasons, 36 Malaysian scientists were sent for 18 scientific expeditions to Antarctica. To-date, there are more than 40 scientists and postgraduates students actively working in scientific research on Antarctica. These scientists and students come from various institutions including Universiti Malaya, Universiti Sains Malaysia, Universiti Kebangsaan Malaysia, Universiti Putra Malaysia, Kolej Universiti Sains dan Teknologi Malaysia, International Medical University, Multimedia University, Universiti Malaysia Sabah, Malaysian University of Science and Technology, and Malaysian Centre for Remote Sensing.

4.1. More programme activities and research development created

In the initial stage, scientists under MARP focussed on atmospheric events and biodiversity in Antarctica. This laid the groundwork for collaborations with foreign researchers well-versed in Antarctic sciences and led to the expansion of scientific exploration under MARP. Currently, researchers under MARP are conducting research in various fields like geology, remote sensing analysis, polar microbiology and ecology. Scientific endeavour in the Antarctica is expensive though highly rewarding. Thus, expenditure of the funds allocated to the Programme is highly accounted for and goes only to support research that is deemed of great value. The Programme acts as a vetting committee to ensure Malaysian scientific endeavours in Antarctica is of international standard and great relevance. The Programme is also responsible for coordinating Malaysian researchers' involvement in the International Polar Year (IPY) 2007-2008. The IPY is a programme under the International Council for Science (ICSU) to coordinate an international cooperation of multidisciplinary research in the polar region. Malaysia's contribution to the polar sciences has been recognised at the international level. In SCAR, Professor Dato' Dr .Azizan Abu Samah is entrusted to head a four-year Action Group on Modelling and Observation of Antarctic Katabatic (MOSAK) working closely with atmospheric scientists from the British Antarctic Survey.

The Programme also functions to encourage the dissemination of information and participation of Malaysian scientists at international conferences. In the SCAR open science meeting in Bremen, Germany in July 2004 the Malaysian scientists from the programme presented 7 academic papers, a favourable comparison to New Zealand's scientists presenting about 19 academic papers at the same conference. In the pursuit of promoting research, as well as foster scientific collaborations, MARP has been responsible for organising seminars, both at local and international level in the field of Antarctic science. The first "Workshop on Malaysian Antarctic Research Programme" was held in October 1998 at INTAN and was instrumental in consolidating the scientific cooperative spirit among Malaysian researchers in the field. Two years later, the outcome of the cooperation was presented in the "Seminar on Antarctic Research: Challenges and Experience" held in University Malaya in May. The Malaysian International Seminar on Antarctica in 2002 and 2004 has attracted many participants both locally and abroad with the support of various distinguished speakers.

Members of MARP has been organising various workshops to help promote and improve technological innovations in Antarctic research. The workshops have been invaluable not just in disseminating the latest information in the field but also to train scientists and graduate students in the region in various significant technical skills. In 2005, a "Workshop on Pigments Analysis of Microorganisms" was conducted in University Malaya with Dr Simon Wright from the Australian Antarctic Division and Dr Hideyaki Miyashita from Kyoto University came to

speak and demonstrate the latest techniques. March 2006 will see a “Workshop on Antarctic Wind Field” conducted also in Universiti Malaya to explore atmospheric and geological research in the Antarctic. The spirit of “Malaysia Boleh” is the core of the Programme’s success in fostering resilient and dynamic world-class scientists in the country. The Programme continues to formulate steps to promote our scientists’ contribution to the body of scientific knowledge and to encourage Malaysia’s role in the international platform of Antarctic research and administration.

5. Strategic interest to developing a world-class scientific research capacity in polar sciences

Science in the Antarctic is no different than science elsewhere. It must be good science. Hence in the pursuit of developing good polar science, the MARP requires that the research proposals undertaken by the Malaysian scientists are peer-reviewed by a national peer review committee established by the Academy of Science and if successful be reviewed by international peer review committee of our partners such as Australian Antarctic Division or the British Antarctic Survey. It is only when the proposals are accepted by the two committees that MARP will fund and arrange logistics to support the project activities. Taking into consideration that some scientific proposals may need an initial budget, MARP has set aside some seed fund to enable the scientists to undertake a small or pilot research project to develop their proposal to be submitted for the full peer review round. Due to the rigorous review process, the development of MARP research proposal may take about a year to two years before the full research activities can be undertaken and fully funded by MARP. Once the research starts, the researchers are encouraged to publish in peer-reviewed journals and the biennial proceedings of the Malaysian International Seminar on Antarctica (MISA) and other related local refereed journals and special publications. The researchers are also encouraged to present their findings in ranked international meetings and seminars organized by SCAR and related international agencies such as the International Geophysical Union (IGU) and International Association of Meteorology and Atmospheric Sciences (IAMAS).

5.1. Developing a resilient group of local scientists

The exposure of working in the challenging environment of Antarctica had enabled the program to develop a group of scientists who are resilient and innovative. Scientific works in Antarctica tend to attract scientists who have a good field work experience and who like the outdoor. They tend to be good climbers or good drivers or field workers. The challenging environments tend to weed out scientists who do not enjoy field work as part of the scientific portfolio from joining MARP research group. The experience of working in the polar environment will also deepen our field work activities in planning and mounting major field work such in oceanography that has been undertaken by MARP scientists in USM and UM.

6. Government support in RMK8

Since MARP was established, there are 15 research projects involving 40 researchers from 7 universities. Among the major outcome of these projects include a collection of microalga culture, development of technology of enzyme assay and design gene probe, and discovery of new species of bacteria in Antarctica. Another milestone of the program was the establishment of the National Antarctic Research Centre located in the University of Malaya, which serve as the national data centre for Antarctic data. It is also a centre of excellence for microbiological research, polar meteorology and numerical weather modelling. Three international seminars and two workshops had been organised by MARP to develop further research capacity. An extended abstract proceeding and published refereed proceedings of selected papers were produced from those seminars. Another international workshop on Antarctic wind will be organised by MARP with SCAR in 2006. MARP gained the recognition of international programs such as SCAR, Asian Forum on Polar Science (AFOPS) and BAS (UK). Developed collaboration with Australia (AAD) Antarctica New Zealand (ANZ), Argentina (IAA), South Africa (SANAP) and India (NCAOR). Apart from these developments, a number of papers were also presented in various international seminars and conference. There are 47 papers that were published in refereed journals and proceedings and 5 pending applications for patent.

In term of human resource capacity development, there are now seven PhDs candidates working on various fields dealing with Antarctic biology, upper atmosphere, solar-terrestrial interactions and weather and climate of Antarctic. The number of M.Sc. Candidates at present registered under the MARP research program is 21 candidates in various fields of biology and physical sciences. Major impacts from the above achievement include contribution to the national initiative on biotechnology through bioprospecting from Antarctica especially in the form of extremophiles. Through MARP's involvement in the SCAR and IPY programs, Malaysian scientists will be able to contribute to the international science community and global issues such as climate change and environmental conservation. Workshop organised and the training at laboratories in BAS (UK), AWI (Germany) and Byrd Polar Research Institute (USA) will enhance biological research and numerical weather and earth system modelling capacity.

6.1. Malaysia achieving the 'observer status' in ATCM meeting

Malaysia has been invited to "observe" the ATCM meeting since 2002. Our position of joining the ATS is now under serious consideration by our Ministry of Foreign Affairs. If we do accede, our aim is to be accepted as a consultative member of ATS so that we can be active in the governance of Antarctica. After joining the ATS we also would like to have a physical presence in Antarctica. Hence in RMK9 MARP proposed that a feasibility study should be made on establishing a Malaysian Research Base in Antarctica. At the moment all Malaysian research activities in Antarctica are undertaken under bilateral agreements with national program partners such as, New Zealand, Australia, India, Argentina and South Africa. These co-operations enable the program to concentrate on funding research activities while the capital logistic cost is borne by our partners. It is envisaged that after sometime the hospitality will erode, and rightly Malaysia will have to contribute to the logistic and support of our research. In the short term, the program must institute a human development program to increase the depth and experience of our scientists in field work in Antarctica. The researchers need to gain more experience and knowledge in working in extreme cold climate and the necessity of getting the right equipment and logistic support such as power and transport. As such most of the projects at the moment were restricted to the vicinity of Scott Base or Casey Station. In order to expand Malaysia's interest and know-how in operating in Antarctica, there is a need to develop field capability further from the well supported bases and operate scientific research in the deep field away from the bases.

7. Conclusion and recommendation

The Malaysian government again in RMK9 has fully supported MARP proposal to manage our program better and to realise the main strategy and objectives of our national science policy. This will need further investment in training and instrument development. Once our scientists and support staff have, enough experience and Malaysia accede to the ATS we can then conduct a feasibility study to establish a Malaysian research station in the Antarctic. This will be a historical event since we will be the first Muslim country to do so under the ATS. Pakistan had earlier established a research station without the blessing of the ATS and had now abandoned their Antarctic program. The establishment of an all-year research station suitable to house 40 personnel will mark a major development for Malaysia and will seal our stake in the governance of Antarctica under the ATS. It will also strengthen our position to be admitted as a member of the Antarctic Treaty Consultative member, which would give us a voting right in the development of consensus of the process of governance of Antarctica. The establishment of a Malaysian Antarctic base during the IPY and also as a celebration of 50 years of Malaysia's independence will be a fitting milestone for the MARP. However, such presence will only be feasible if Malaysia submitted our ratification to accede to the Antarctic Treaty System (1956) and fully adopted some of the requirements under the 1991 Environmental Protocols (Madrid Protocols).

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