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“Public Participation: Shaping a sustainable future”

Public Perceptions of Antarctic Values: Shaping future environmental protection policy

Rohani Mohd Shah*

Faculty of Law, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

Abstract

The natural environment of Antarctica represents 3 unique values which are recognised by Antarctica scientists through The Madrid Protocol 1991; its wilderness, its aesthetic values and its scientific values. These values are essential to be protected for the future generation. A survey is necessary to show that the public understood these core values in support of the scientist's demands for these values to be protected. The findings from this survey will confirm the indicative notions earlier. This paper will discuss the factors selected in determining the public perceptions of *Antarctic Value* to the policy makers in constructing The State Environmental Protection Policy.

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1. Introduction

The natural environment of Antarctica has unique values for us human beings. While pristine environment is continually decreasing on Earth in general, the Antarctic Continent, through The Madrid Protocol 1991; is able to maintain not only its pristine environment; its three intrinsic values of Antarctica are admirably guarded by its guardian, the Antarctic Treaty System. The Antarctica three intrinsic values are; its aesthetic values, its scientific values and its wilderness. In response to the desire to keep Antarctica values protected against any impact of global warming or climate change, all State members to the treaty is required to take local action to incorporating environmental aspects of Madrid Protocol as

* Rohani Mohd Shah - corresponding author. Tel.: +603 55435854; fax: +603 55211074.
E-mail address: rohanimohdshah@salam.uitm.edu.my.

part of the State owns legislative framework (Shah R. M., 2012). In meeting this Obligation State will have to incorporate Madrid Protocol 1991 into the State legal system and in meeting this obligation, State will have to construct an administrative policy strategy to secure the effectiveness of the new legal framework. Through the guide of Principle 10 of Rio Declaration the task of seeking the most suitable policy for the public in accepting and adopting to the obligations, is made easier.

The Rio Declaration on Environment and Development, adopted by 178 Member States in 1992 at the Earth Summit, was perceived as a progressive statement by all nations that enshrined the recognition of the indivisibility of the fate of humankind and established sustainable development in an international framework. The Rio Declaration, a compact set of 27 principles introduced principles relating to participation and the importance of specific groups for sustainable environmental development. Principle 10 (Access to Environmental Information) is the one of most successful Principle which covers most European Union (EU) State members. Accordingly Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes (Davis, P. (1995). The Principle 10 of Rio Declaration will strengthen the implementation and application of both international instruments above. The implementation of this principle has been very successful in some regions and looks set to secure successful implementation in others. On the last note is where Principle 10 agrees with Madrid Protocol, that public participation is necessary to constructing State policy on environment. Public participation crucial role is recognised by nation states and international agencies alike however, even in European countries many populations continue to face significant barriers to influencing decision making processes and therefore unable to hold governments to account over unsustainable policies and actions (ATCM Final report, 2009). Hence, this the study will reflect that with the findings from public perception survey on Antarctica values (if referred by the policy makers, Tina, T. (2011)) may indicate a better understanding of the extend of action or measures the policy makers should take in the attempt to preserve Antarctica pristine environment by keeping its intrinsic values protected from the impact of global warming. So, the core content of the state environmental protection policy will be shaped through the perception of the public on the extent of their desire to protect the Antarctica values which are reveals through the survey.

2. Background

Malaysia prominent participates is when Malaysia Cabinet Ministers agreed to accedes to the Antarctica Treaty 1956 (Shah, et al., 2012) and ratify the stringent guidelines to the Antarctica Treaty Protocol on The Environmental Protection, 1991 (The Madrid Protocol) into the new local law adhering to the policy that Antarctica environment is the common heritage of mankind and preserving the pristine condition is necessary in its attempt to protect its values against the challenges of global environment (Z. Ismail et.al. (2012). However, in developing that measure, only scientist can assist accurately through their scientific forecast or predictions, what are *the information sufficient* to be restraint or enhanced or that may affect the effectiveness of the new law or policy as demanded in the Madrid Protocol 1991 in protecting environment (Shah, R. M., & Hashim, R., 2012). Perhaps through the public perception survey the important of Antarctica values will be properly captured from the public mindset and a true perception will be able to be instilled if necessary, to build the correct understanding of what *are the information sufficient* to be considered in protecting the Antarctica 3 unique values against human activities and the impact of global warming couple with *science diplomacy from scientist* suggestion will provide the proper code of conduct how the policy can later be implemented effectively.

Accordingly several number of issues affecting the environmental policy and the problems faced by the decision makers in Malaysia when developing an effective environmental protection policy. The reason of ineffectiveness of the decision making process are due to the priority given when adoption of international environmental policies (Shah, & Hamisah, 2012). The adoption gives preference to economic development rather than a sustainable approach to balanced economic development with environmental protection (Ainul, 2005) as desire and demanded by the public. Lack of coordination between various government agencies endowed with decision making in planning and economic development acted in independently on separate sector which is very difficult to manage and construct a general policy but with the assistance from the survey at least some guide is available for the policy makers (Dudley, N. (2008).

3. The governors of antarctica

The Antarctic Treaty is a good example where nations can effectively work together to preserve the global environment, for the benefit of all mankind. The Governors' of the Antarctic Region, the Antarctica Treaty Consultative Members through Resolution 9/2009 Report indicate that the Consultative Parties (the 12 original States of the Antarctica Treaty 1959) consider their management obligation in ensure that Antarctica is managed for the interest of all mankind. Antarctica policy experts have advocated for increased efforts to link ozone protection efforts from one State's policy to another. Policy decisions in one State may and could affect the costs and effectiveness of environmental improvements in the other State said RM Rohani and R. Hashim (2012). In achieving these efforts the scientists is call for to play the role in advancing the Science Diplomacy to other State so that the efforts can benefit the other State with less cost. Antarctica governors face a number of challenges, many of which have significant environmental implications (Shah, & Hashim, 2012). Thus, if the new law requires that tourism to be reduced, as encourage by the Madrid Protocol 1991, will only be effective if the public have a basic understanding of the relationship. With the help of the survey, that policy will achieve its aim and the new law will be effectively enforced. Therefore it is through this public survey can the public standard be drawn to set the basic guide for the policy makers to construct the new policy.

4. Basic facts of the public perception survey

The questionnaire will begin by Feb 2014 representing 500 respondents, between the ages of 20 – 60 and Malaysian citizens. The survey will be in equal numbers of male and female respondents. Approximately 100% of the respondents selected at random have secondary or higher levels of education, and some level of environmental knowledge (Rijal et al., 2013). The respondents are presumed not to have been to Antarctica and have heard or have knowledge of Antarctica existence. The study anticipated that 10 students will participate to collect 500 questionnaires from 5 faculties involved. The Faculties Are Faculty of Law, Faculty of Administrative Science & Policy Studies, Faculty of Business Management, Faculty of Architecture and Faculties of Applied Science, Universiti Teknologi MARA from Shah Alam Campus, in Selangor, Malaysia. The questionnaire will be divided into four sets of questions containing a total of 5 main questions each. The required answers are in the form of multiple choices, and multiple answers are allowed. A short introduction at the beginning of the document provided the respondent with some factual background information on the Antarctic Treaty and the goal of the research survey (Anniz, et.al (2013). Every care was taken so as not to influence the respondents prior to providing their responses on their perceptions of the values of Antarctica.

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In Question 1 of the survey, the respondent will be asked to provide some general information about him/herself, including age, gender, educational level, and level of knowledge about activities in Antarctica. In Question 2 the respondent will be asked to elaborate on his/her general perception of Antarctica, including his/her impressions of Antarctica and whether the respondent considers the role of Antarctica or it's important in relation to global environment. In Question 3 the respondent will need to respond to more specific questions on his/her perception of Antarctica, over the scientific importance of human activities in Antarctica, through the scientists activities or tourism or mining exploration in Antarctica region that he/she supports or believes are taking place in Antarctica, and whether/how he/she thinks these activities should change in the future will be in Question 4. Question 5 will be on the perception whether scientists should be allowed to study the wilderness of Antarctica with some degree of control code of conduct or not allowed to disturb the wilderness at all.

4.1. Perception of Antarctica aesthetic values in global environment

“There is, I feel sure, no region in the world grander in its scenery than the Antarctic, and no place more transcendent in its beauty while it quickens the traveller’s daily wonder and deepens his reverence, forces him to feel that it is a world he can never conquer, a world in which the forces of nature are too tremendous to overcome, and must resignedly be bowed before in the hope that they will suffer him to come and pass again unscathed.” This is the voice of Rudmose Brown in 1906, part of the record from *The Voyage of the “Scotia”*. The protection of aesthetic values of Antarctica can be interpreted as protection of natural landscapes, especially those to which we respond as beautiful or awesome against any attempt to temper with its original present.

The Madrid Protocol provides for the protection of wilderness and aesthetic values both through the environmental impact process (Article 3.1 and Article 3 .2.b.vi; Annex I, Article 3 .2.i) and the Antarctic Specially Protected Area System (Ann ex V, Article 3.1 and Article 3.2 .g). Global warming and climate changes are evidently caused by human activities have the potential to alter agricultural productivity, freshwater availability and quality, sea level, and many other factors of importance to pristine environment of urban society and most concerns’ is that global climatic changes have the potential to escalate the existing international tensions between states if not tackle cooperatively (Enzenbacher, (1995).

4.2. Perception of Antarctica Scientific Value

Although Antarctica is a region located far away from urban societies, it is a great contributor to pristine environment of urban communities. Antarctic Continent has a crucial role to play in our understanding of global climate change (Shah, et al., 2012). Locked in its four kilometre thick ice sheet is a unique record of what our planet's climate was like over the past one million years and with which it provides information where scientists can study the effects of global warming on which control the very sustenance of mankind desire for a ‘pristine quality of life’. Antarctica is a remarkable continent. Remote, hostile and uninhabited, Antarctica is the key to understanding how our world works, and our impact upon it. Antarctica is important for science because of its profound effect on the Earth's climate and ocean systems. And the Antarctic has a crucial role to play in our understanding of global climate change. Locked in its four kilometre-thick ice sheet is a unique record of what our planet's climate was like over

the past one million years. Antarctic science has also revealed much about the impact of human activity on the natural world. The discovery in 1985 by scientists at British Antarctic Survey (BAS) of the hole in the ozone layer above Antarctica revealed the damage done to the Earth's atmosphere by man-made chemicals. As well as being the world's most important natural laboratory, the Antarctic is a place of great beauty and wonder. Its frozen wastes have fired the public imagination for generations, and around 30,000 tourists now visit the Antarctic each year to experience what life is like in the Earth's last great wilderness. However, Antarctica is fragile and increasingly vulnerable (Shah, et al., 2012) commented that Antarctic science has also revealed much about the impact of human activity on the natural world and other types of damage done to the Earth's atmosphere caused by man-made chemicals. Therefore preserving the environmental condition of Antarctica is actually preserving the pristine environmental condition for the rest of the globe (Shah, et al., 2011).

4.3. Perception Of Antarctica Wilderness Values

Antarctica is the least inhabited region in the world and has therefore had the least influence from human activities and, unlike the majority of the Earth's continents and oceans, can still be considered as mostly wilderness. Both wilderness and aesthetic values can be impaired by human activities in a variety of ways with the severity varying from negligible to severe, according to the type of activity and its duration, spatial extent and intensity. Although commonly portrayed as the last great wilderness, Antarctica is no longer a pristine environment in 21st century. At some locations, particularly around long-standing research stations, evidence of past human activity is clear and, as Antarctic tourism increases, the pressures on the environment can only grow. Most human activities have some form of environmental impact (Saripah et al., 2011). The Antarctic is the epitome of wilderness, yet it has contributed much to human welfare through Antarctic, especially if increased, could erode or destroy some of the natural qualities of this unspoiled wilderness unless special care is taken to avoid or reduce the effects of new activities." As a result, much of its wilderness and aesthetic values have remained intact.

4.4. The Finding could be useful Indicators to Policy Makers

The results of this study provide a glimpse of the opinions of a small cross-section Malaysian population but predominantly educated and highly localized. Future surveys among populations of different cultural backgrounds will be needed to verify the universality of the results from this first phase of the study. While recognizing the limitations of the project, the authors also recognize the new insight that this study will bring (Shah, R. M., & Husin, Z., 2013). In that respect, the findings from this study may provide some unique information on the views of a small part of mankind, which can potentially benefit from the management of Antarctica, but currently does not participate actively in the decision making process (Halimatun et al. (2013). Therefore, since the Consultative Parties to the Antarctic Treaty frequently state that they manage Antarctica 'for the benefit of mankind,' the general public's opinion on management issues should be considered relevant information for the decision making process within the State Government of the members country.

If this finding were to be fed into decisions regarding the management of Antarctica it would mean that, policy makers should ensure that firstly, less human activities in Antarctica via tourism. The fact that environmental systems are global in their operation and so environmental problems can only be tackled at the global scale. This creates many potential problems, according to Shah, et al. (2011) because of the division of the earth's territory into many separate sovereign states: solution of environmental problems thus involves those states acting both individually and collectively. In assessing the need for each States to create its own policy on governing Antarctic's pristine environment for the purpose of sustaining the

present global environment or reducing the spread of global climate change it is necessary for that policy to point out three important features. The first consideration is for the State to give its accession to the ATS which is the comprehensive and legally binding instrument which covers the whole spectrum of the protection of the Antarctic environment. The second consideration, the State policy must be able to transform the conservation ideas outlined in the Treaty and the vague preservation and protectionist measures formulated in the ATCMs recommendations, into legally binding rules, merging them inseparably with pragmatic management provisions, resulting in a uniform coherent Antarctic environmental legal regime, furnished with necessary executive and judicial instruments; into its own local environmental law focusing on the environmental impact assessment as the vital test criteria. The third features, the policy must be embedded in it the high degree of flexibility in its character, and able to constant adaptation to the fast changing protection criteria of preserving pristine environmental conditions in the future (Shah, 2013).

The Antarctic Treaty (ATS) 1959 provides the boundary conditions for all human activities in the Antarctic, including tourism. The ATS can be argued to contain key elements of a vision for Antarctic tourism. The preamble of the Antarctic Treaty recognizes that “it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord”. Tourism is a legitimate activity under the Antarctic Treaty, and each year visitors from all over the world come to witness and experience Antarctica’s tranquil natural splendor of ancient glaciers and unique wildlife. Nearly all of these visitors arrive by ship, with the remainder arriving by air.

Antarctic tourist season runs from November into March (Liggett, (2011) when temperatures range at around 25° to 40°F (-4° to 4°C), with 23 hours of daylight. Antarctica is an incredible tourist destination of icebergs, mountains, glaciers and wildlife. Tourists are attracted by its scenery, wildlife, adventure activities and remoteness. Visitor numbers have increased rapidly, particularly in the last 5 years with more than 37,800 tourists visiting Antarctica in 2008.09. Visits are confined to the warmer **austral summer months** and the majority of visits are to the Antarctic Peninsula. This increase in visitors, confined to certain areas and intensified over certain months raises questions about the **sustainability** and **environmental impact** of so many people visiting such a fragile environment. The Protocol 1991 regards the visit as activity classified as the "minor or transitory impacts" as a measurement. Details of the classification and the procedures to follow is seen at Annex I of the Protocol 1991 depending upon whether the planned tourist activity will have "less than a minor or transitory impact"; "a minor or transitory impact" or "more than a minor or transitory impact". In essence, the Protocol notes the importance of science but highlights the need for prior assessment of any impacts and for mitigation - the greater the impact the greater the in-depth assessment and the need for mitigation. However, if tourism increases significantly or is not well managed there is a massive potential to impact on wildlife which is why the monitoring studies are so important to help determine effective management measures (Farhana, et al., 2013) and further research is essential looking at breeding potential well as counting the eggs that are laid and hatched. A key element of this was to require all those planning activities in the Antarctic including tour operators to submit Environmental Impact Assessments of the potential effects of planned activities. IAATO has endeavored to fill in any potential loopholes by requiring its operators to abide by the provisions of the Protocol and provide the organization with Environmental Impact Assessments if their National Authority does not request them (Liggett, 2011).

5. Conclusion

The concluding benefit from this survey may constitute a reason for the State government to develop programs to promote and increase the knowledge of Antarctica among its population on the effect of tourists on Antarctica's pristine environment and unique values. There are many challenges and gaps in implementation Madrid Protocol 1991 at national level. Each State should fulfil this guardianship role by working to the highest environmental standards in all its local and international operations and by playing a leading role in reducing urban activities accelerating global warming (Liggett, 2011). The policy maker must act to protect the environment which mainly concerns the present public and the interests of the future generations from any incurring harm of its own achievement. Not only are global warming-induced changes currently underway, but scientists also expecting additional effects on human society and natural environments around the world. The policy makers must listen to the advice of the scientists and the finding of public survey to be accurately translated into the State policy.

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References

- Shah, R. M., & Hamisah, A. R. (2012). Guarding Antarctica from global warming is the key to pristine urban communities. *Procedia – Social And Behavioural Science*, 35(11), 338-339.
- Bastmeijer, K. (2009). Protecting polar wilderness: Just a western philosophical idea or a useful concept for regulating human activities in the polar regions? In: D. Leary, T. Koivuova, and G. Alfredsson, ed. *Yearbook of Polar Law*. Boston/Leiden: Brill Martinus Nijhoff Publishers.
- Beck, P. J. (2006). The united nations and Antarctica, 2005: The end of the 'question of Antarctica?'. *Polar Record*, 42, 217-227.
- Shah, R. M., & Rahman, H. A. (2011). Guarding Antarctica from global warming is the key to pristine urban communities. *Procedia –Social And Behavioural Science*, 35, 378 – 383.
- Rijal, S., Junaidah A., & Zamreen, A. (2013). Green technology design approach for lifeable park of Tasik Biru Kundang, Malaysia. *Asian Journal Of Environment- Behaviour Studies*, 4(11), 39 – 37.
- Davis, P. (1995). *Wilderness visitor management and antarctic tourism*. Doctoral Thesis. Cambridge University, Scott Polar Research Institute, United Kingdom.
- Aniz, F. I. B., Mohamed Yusoff, A., & Abdul Hadi N. (2013). Social cohesion of the Malaysian cul-de-sac neighbourhoods: Brief critical review of concepts. *Asian Journal Of Environment- Behaviour Studies*, 4(11), 99-100.
- Dudley, N. (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. 86 pp. Retrieved from [http:// data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf](http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf)
- Enzenbacher, D. J. (1995). *The management of antarctic tourism: environmental issues, the adequacy of current regulations and policy options within the antarctic treaty system*. Doctoral Thesis. Cambridge University, Scott Polar Research Institute, United Kingdom.
- Shah, R.M., & Husin, Z. (2013). Policy integration: Internationalization of state environmental protection policy. *Procedia Of Social Behavioural Science*, 101, 284 – 291.
- Halimaton, B., Elsadig M., & Ahmad Mizan, H. (2013). CO2, quality of life and economic growth in East Asian 8. *Journal Of Asian Behavioural Studies*, 3(8), 13 – 15.
- Shah, R. M., & Hashim, R. (2011). Scientists paradise: Environmental sustainability and policy governance. *Procedia Social And Behavioural Science*, 35, 384-388

- Saripah, A. L., Mohd Shukri, O., Yeop, H. B., & Zainuddin, A. (2013). Effect of situational factor on recycling behaviour in determining the quality of life. *Journal Of Asian Behavioural Studies*, 3(8), 37-38.
- Ismail, Z., Shah, R. M., & et al. (2012). The role of Malaysia under the antarctic treaty 1959 and the Madrid protocol 1991, *IEEE Colloquium*, 42 – 47.
- The Secretariat of the Antarctic Treaty. (April 6-17, 2009). *Final report of the 32 antarctic treaty consultative meeting*, 1.
- Farhana, W. Y., Melissa, M., & Azyyati, Z. (2013). Identity status of TESL students in Malaysia. *Journal Of Asian Behavioural Studies*, 3(8), 60.
- Liggett, D., McIntosh, A., Thompson, M., Gilbert, N., & Storey, B. (2011). From frozen continent to tourism hotspot? Five decades of antarctic tourism development and management, and a glimpse into the future. *Tourism Management*, 32, 357-366.
- Shah, R. M., & Hashim, R. (2012). Advancing antarctica science diplomacy beyond traditional boundaries in developing state environmental protection law for better quality of life. *International Seminar on Business, Engineering and industrial Application (ISBELA)*, IEEE, 345.
- Tina, T., Kees, B., Jessica, O', & Patrick, M. (2011). Public perception of the antarctic wilderness: Surveys from an educated, environmentally knowledgeable european community; USDA Forest Service Proceedings RMRS-P-64. Retrieved from <http://available at: http://ssrn.com/abstract=2192071.pdf>
- Ainul, J. (2005). Challenges in implementing and enforcing environmental protection measures in Malaysia, Conference paper presented on the *3th Malaysian Law Conference*, Kuala lumpur, Malaysia.