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Agenda Item:

2.1.4

Person Responsible: Representative  
from Turkey

**XXXIV SCAR Delegates Meeting  
Kuala Lumpur, Malaysia, 29-30 August 2016**

# **Application of Turkey for Associate Membership**

## **Executive Summary**

**Title:** Application of Turkey for Associate Membership

**Authors:** Turkey authorities

**Important Issues or Factors:** From the SCAR Rules of Procedure:

*Applications for Associate Membership:*

- 1.3.1 are usually expected to precede application for full membership; and*
- 1.3.2 shall be accompanied by a statement of what the applicant hopes to contribute to and/or gain from the Charity.*

**Recommendations/Actions and Justification:** Delegates are requested to consider Turkey's application for Associate Membership of SCAR.

**Budget Implications:** \$5,000 annual membership fee for Associate Membership.



OUR REF: 77913051-724.01.03.02-44155

03 March 2016

Prof. Jerónimo LÓPEZ-MARTÍNEZ,  
President  
Scientific Committee on Antarctic Research (SCAR)

Dear Prof. LÓPEZ-MARTÍNEZ,

Please consider the current letter to certify that The Scientific and Technological Research Council of Turkey (TÜBİTAK), as a member of the International Council for Science, appoints TÜBİTAK Marmara Research Center Environment and Cleaner Production Institute (TÜBİTAK MRC ECPI) to represent Turkey as an Associated Member in the Scientific Committee of Antarctic Research (SCAR).

In this scope, TÜBİTAK MRC ECPI will coordinate all activities related to Antarctic research in our country.

We thank you for your kind cooperation and wish you success for your activities.

Sincerely,



Prof. A. Arif ERGİN  
President

Enc: Application of Turkey for Associate Membership (7 pages)

As known, Turkey has made substantial progress in many areas including economy, education as well as science, technology and innovation in recent years. Especially during decade, expenditures in R&D has increased by 3.4 fold and exceeded 15 billion dollars in terms of purchasing power parity. Most recently, R&D expenditure as a percentage of GDP has also surpassed 1%, which is considered as a critical threshold. The performance of the private sector on the expenditure on R&D has increased to 49.8% and the number of full time R&D personnel has been 115.000 in 2014. With these developments, Turkey has also set very significant goals related to science and technology which is gathered under ‘Vision 2023’ Strategy. During this timeframe, Turkey has advanced the capacity of the national science, technology and innovation ecosystem, including in the priority areas.

The Scientific and Technological Research Council of Turkey (TÜBİTAK) has initiated more than ten new funding mechanisms both for academic and industrial research in the last three years and revised the existing ones considering the fact that today’s challenges should be addressed globally rather than at national level. We have been working on new cooperation programmes allowing high impact high budget projects at international level.

In light of these developments, Turkey is prepared to contribute to the Antarctic Treaty and plans to establish a research base in near future and developing a science program for the Antarctic research. In principle, Turkey can play an effective role in monitoring and conservation of good environmental status of the Antarctic through scientific research. A number of Turkish scientists had already conducted valuable scientific studies in the Antarctic mostly on climate change, biodiversity and fisheries. Moreover, Turkish sailors had completed a long navigation to the Antarctic in February 2014.

A series of activities (workshops, awareness meetings) for the last couple of years were held by Turkish marine science community which is composed of universities and other research bodies. As a result of these scientific activities, the Polar Research Center was also established within the framework of Istanbul Technical University.

The National Marine Research Strategy has been published on October 2<sup>nd</sup>, 2014 with the main aim of capacity building on polar research. The capacity building on polar research as an implementation tool of the Strategy was also stated in the draft National Marine Research Programme being one of the main ten research topics.

Turkish marine science community has already stepped towards a well understanding of Antarctic Research with the leadership of eminent Turkish scientists on Polar Research and now having the capacity to focus on research through institutional structures that they are involved in.

In line with these developments, Turkish marine science community is willing to further develop their understanding by performing higher level research in cooperation with international and national partners. The main interest topics would be the understanding of the dynamics of pelagic ecosystems and possible marine resources with ice cover and non-ice cover conditions.

Scientific Committee of Antarctic Research (SCAR) is a scientific establishment where all the scientists focusing on Antarctic region gathered with aim of sharing the high quality international scientific research in the Antarctic region. Turkey has already initiated joint Antarctic research with other countries and it is believed that Turkish scientists can well contribute to the successful scientific achievements that SCAR gave rise to.

Moreover, it is considered that SCAR membership of Turkey would highly benefit the establishment of multilateral cooperation to support joint research of international groups and utilization of the resources of the member states, as well as production scientific data and sharing knowledge. The existing studies and a scientific community focused on Antarctic region gives the confidence to establish a Turkish science base in Antarctica.

We welcome any clarifications that may be required and look forward to the approval of our request to become an associate member of SCAR.

## **MAIN ANTARCTIC ACTIVITIES PERFORMED BY TURKEY:**

### **1. Establishment of Research base in Antarctica, Workshop – I, 30 April 2013, Istanbul University & Turkish Marine Research Foundation**

In Turkey there are a number of scientists already focused on research on Antarctic region collaborating with other countries. The main target of the workshop was to bring related people together in this regard, to ensure the exchange of information, creating a science policy with participants to offer to the authorities of the state.

As a result of this workshop, the very first scientific Turkish journal about Antarctic issues has been published which can be reached via [www.tudav.org](http://www.tudav.org). The articles within the journal mainly discuss the reasons of having a scientific station and a research program on polar studies.

### **2. Brussels XXXVI Antarctic Treaty Consultative Meeting, 20-29 May 2013**

Republic of Turkey Ministry of Foreign Affairs appointed 5 delegates to attend to XXXVI Antarctic Treaty Consultative Meeting. The head of the delegate had a speech about the interest of Turkey for Antarctic research.

### **3. Establishment of a Research base in Antarctica, WORKSHOP – II, 17 June 2013, Istanbul Technical University, Maritime Faculty**

Turkey became a party to the Antarctic Treaty in 1995, however over the following years, the country did not pay adequate attention to the subject of signing environment protocol associated with setting up temporary or permanent research base on the continent. Over time, critical mass of trained researchers working on the Antarctic studies has increased. In this context, in April 2013, under the leadership of the Turkish Marine Research Foundation and Istanbul University, the first workshop was organized in which the necessity of establishing Turkish Research Base in Antarctica was discussed, and the book/scientific journal was published.

After the workshop, a group of experts have got in contact with related government agencies in order to express their willingness for the establishment of research base in Antarctica. The same group of experts has participated to "36th Antarctic Treaty Consultative Meeting in Brussels, 20-29 May, 2013" as the official delegation of Maritime Transport and Communications and Ministry of Foreign Affairs. The delegation has stated the interest of Turkey on establishing a scientific base at the region and followed up the current developments of the other member parties.

Second workshop, in June 17<sup>th</sup> 2013 at ITU Maritime Faculty, was held with a broader group. At this workshop, the delegates shared their experiences of the 36th Antarctic Treaty Consultative Meeting in Brussels. In addition to that the Ministry of Environment and

Urbanization, Ministry of Transport, Maritime and Communications, and Ministry of Foreign Affairs expressed their willingness to support the idea of establishing a Turkish Antarctic Program, Turkish scientific base in Antarctica and as well as a constructing a Polar Class Research Vessel.

#### **4. Turkish Antarctic Science Programme Road Map Workshop, 18-19 November 2013 Istanbul**

The meeting was held to create a road map towards establishing a Turkish Polar Program and a Turkish Scientific Base in Antarctica with the participation of national and international participants. In the final report of the workshop, the establishment of a national committee or a commission for the coordination with the stakeholders and for the orientation of further development of the Turkish Antarctic Programme was recommended. Moreover, it was stated that it is essential to construct a long term Antarctic scientific strategy and programme.

#### **5. Brazil XXXVII Antarctic Treaty Consultative Meeting**

Ministry of Foreign Affairs of Republic of Turkey has appointed 3 delegates to attend to XXXVII Antarctic Treaty Consultative Meeting.

#### **6. SCAR Open Science Conference 2014, New Zealand**

Dr. Burcu OZSOY-CICEK has attended XXXIII SCAR Biennial Meetings & Open Science Conference with the presentation entitled “New insights into snow depth on Antarctic sea ice from satellite remote sensing”.

#### **7. Prof. Dr. Bayram ÖZTÜRK has attended the Japanese Antarctic Expedition**

Prof. Dr. Bayram ÖZTÜRK was invited to 56<sup>th</sup> Polar Expedition by Japanese Polar Research Institute 2014. He stayed for 4 months in Antarctica during the expedition.

#### **8. The very first Antarctic related book was published**

Prof. Dr. Bayram ÖZTÜRK published the book entitled “Why Antarctica” in November 2015.

#### **9. Bulgaria XXXVIII Antarctic Treaty Consultative Meeting**

Ministry of Foreign Affairs of Republic of Turkey has appointed 3 delegates to attend to XXXVIII Antarctic Treaty Consultative Meeting.

#### **10. Publications by Turkish scientists on Antarctic Research**

**Salihoglu, B.**, Fraser, W.R., and Hofmann, E.E. (2001) Factors affecting fledging weight of Adélie penguin (*Pygoscelis adeliae*) chicks: a modelling study. *Polar Biology*, 24:328-337.

**Hüsrevoğlu, Y.S.** and E.E. Hofmann, 2001. Circumpolar Modeling study of Habitat Control on Antarctic Krill (*Euphausia superba*) Spawning. 2001 Gordon Research Conference on Polar Marine Science, Ventura, CA, USA, March 11-16, 2001.

Klinck, J.M., Hofmann, E.E., Beardsley, R.C., **Salihoglu, B.** and Howard, S (2004) Water mass properties and circulation on the west Antarctic Peninsula Continental Shelf in austral fall and winter 2001. *Deep-Sea Research II*, 51:1925-1946.

**Hüsrevoğlu, Y.S.** and J.M. Klinck, 2004. The Influence of Sea Ice Processes in Control-ling the Water Column Structure in the Ross Sea. EOS Transactions AGU, **84**(52), Ocean Sciences Meeting Supplement, Abstract OS32C-19.

Hood, R., Laws, E, and Moore, K, Armstrong, R, Bates, N, Carlson, C, Chai, F, Doney, S, Falkowski, P, Feely, D, Friedrichs, M, Landry, M, Ricardo, L, Nelson, D, Richardson, T, **Salihoglu, B.** and Wiggert, J. (2006) Functional group modelling: progress challenges and prospects. *Deep-Sea Research II*, 53, 459-512

Klinck, J.M., M.S. Dinniman, **Y.S. Hüsrevoğlu**, E.E. Hofmann and W.O. Smith, Jr, 2006. A regional numerical model of the Ross Sea, Antarctica: circulation, nutrients, and ice. AnSlope and CLIMA Workshop, LDGO, Palisades, NY, USA, June 13-15, 2006.

**Hüsrevoğlu, Y.S.** and J.M. Klinck, 2006. A Modeling Study of the Seasonal Changes of Sea Ice in the Ross Sea, Antarctica. EOS Transactions AGU, **87**(36), Ocean Sciences Meeting Supplement, Abstract OS25Q-04.

**Salihoglu, B.**, and Hofmann, E.E. (2007a) Simulations of phytoplankton species and carbon production in the equatorial Pacific Ocean 1. Model configuration and ecosystem dynamics. *Journal of Marine Research*, 65, 219-273

**Salihoglu, B.** and Hofmann, E.E. (2007b) Simulations of phytoplankton species and carbon production in the equatorial Pacific Ocean 2. Effects of physical and biogeochemical processes. *Journal of Marine Research*, 65, 275-300

Klinck, J.M., **Y.S. Hüsrevoğlu** and M.S. Dinniman, 2007. The Influence of Sea-Ice and the Ross Ice Shelf on Water Properties. 14th Annual WAIS/FRISP Workshop, Sterling, VA, USA, September 5-8, 2007.

Kamel, M., **Y.S. Hüsrevoğlu**, M.S. Dinniman and J.M. Klinck, 2007. Small-Scale Winds, Polynyas, and Ocean Properties in the Ross Sea, Second Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Rome, Italy, June 26-28, 2007.

**Salihoglu, B.**, Garçon, V., Oshlies, A., and M. W. Lomas, (2008) Influence of nutrient utilization and remineralization stoichiometry on phytoplankton distribution and carbon export: a modelling study at BATS. *Deep Sea-Research I*, 55, 73-107

Klinck, J.M., **Y.S. Hüsrevoğlu** and M.S. Dinniman, 2008. A model study of the influences of sea-ice and the Ross Ice Shelf on water properties. Third SCAR/IASC IPY Open Science Conference, St.Petersburg, Russia, July 8-11, 2008.

Klinck, J.M., **Y.S. Hüsrevoğlu** and M.S. Dinniman, 2008. Continental shelf water mass distribution, transformation and off-shelf transport in a sea ice-ocean model of the Ross Sea, Antarctica. AGU Ocean Sciences Meeting, Orlando, FL, USA, March 2-7, 2008.

**Ozsoy-Cicek, B.**, H Xie, S.F Ackley, K. Ye, (2008). Antarctic summer sea ice concentration and extent: comparison of ODEN 2006 ship observations, satellite passive microwave and NIC sea ice charts, *The Cryosphere Discussion (TCD)*, 2, pages: 623–647.

**Ozsoy-Cicek, B.**, S.F Ackley, A. Worby, H. Xie, J. Lieser, (2011). Antarctic sea ice extents and concentrations: Comparison of satellite and ship measurements from IPY cruises, *International Glaciological Society (IGS) – Annals of Glaciology*, volume: 52, number: 57, 2011, pg: 318-326.

**Ozsoy-Cicek, B.**, S. Kern, S.F Ackley, H Xie, A. E. Tekeli, (2011). Intercomparisons of Antarctic sea properties from ship observations, active and passive microwave satellite observations in the Bellingshausen Sea, *Deep-Sea Research II* (2011), doi:10.1016/j.dsr2.2010.10.031, volume: 58, number: 9-10, pages: 1092-1111.

Kern, S., **B. Ozsoy-Cicek**, S. Willmess, M. Nicolaus, S.F Ackley, C. Haas, (2011). An intercomparison between AMSR-E snow depth and satellite C- and Ku-Band radar backscatter data for Antarctic sea ice, *International Glaciological Society (IGS) – Annals of Glaciology*, volume: 52, number: 57, 2011, pg: 279-290.

Tekeli, A.E., S.F Ackley, **B. Ozsoy-Cicek**, S. Kern, H Xie, (2011). Monitoring sea ice by ASAR and validating with cruise field data for Antarctica, *International Glaciological Society (IGS) – Annals of Glaciology*, volume: 52, number: 57, 2011, pg: 327-336.

**Ozsoy-Cicek, B.**, S.F Ackley, H Xie, D. Yie, J. Zwally, (2013). Antarctic sea ice thickness from Altimetry: Algorithms based on in situ surface elevation and thickness values. *Journal of Geophysical Research – Oceans*, Vol, 118, 3807-3822 doi: 10.1002/jgrc.20252, 2013