

## **Towards the Turkish Antarctic Science Programme**

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### **Abstract**

Antarctica and the Southern Ocean are presently dedicated to science and peace. Even though Turkey signed the Antarctic Treaty in 1995, it has not conducted any scientific study there until today. The First Turkish Antarctic Science Program Road Map Workshop was held on 18-19 November 2013 in Istanbul with the participation of national stakeholders and international experts from various countries to discuss the Turkish initiative for Antarctic research. The present paper summarizes the outcome of this workshop.

**Keywords:** Antarctica, Antarctic Treaty, SCAR, Turkey

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### **Introduction**

Antarctica has been reserved for peace and scientific research as a result of international cooperation enforced by the Antarctic Treaty signed in 1959 by 12 nations in Washington, D.C. At present the Antarctic treaty is signed by 50 nations. Antarctic research until today has enabled discoveries of fundamental societal importance that could not have been achieved without a substantial

scientific and operational presence in Antarctica and the Southern Ocean. Antarctica is the last continent to be explored and studied. Antarctica is currently experiencing rapid change in terms of both climate and geopolitical status. The future of the continent is agreed upon internationally through the Antarctic Treaty. Although Turkey signed this treaty in 1995, Turkey did not perform any scientific study on this continent until now. Therefore, Turkey does not have a vote concerning the future of the continent at present. To be able to take part in the future decision-making on the continent it is essential to have a long term, high quality Antarctic research programme. Through its presence in Antarctica and participation in international Antarctic affairs, Turkey will increase its scientific capability.

In the light of such visions, the First Turkish Antarctic Science Programme Road Map Workshop was held on 18-19 November 2013 in Istanbul with the participation of national stakeholders and international experts from various countries. This paper is a brief summary of the workshop. A more detailed Turkish Antarctic Scientific Programme will be published in the next issue of the Journal.

### **Outcome of the Workshop**

Turkey is very well placed to contribute novel international quality science in a number of scientific areas, including geology and geophysics, biological and physical oceanography, as well as medical science. Turkish scientists are also addressing key current issues affecting the future climate of our planet.

Other key opportunities that science in Antarctica can offer are: capacity building for scientists, engineers and technologists, public outreach of science and technology, development of new technology and access to other technology through collaboration. To be a member of a vibrant international research community can, raise Turkey's international science profile as well as its diplomatic profile. Skills and experience gained through the Antarctic program will be applied to other scientific fields and areas, which means training of the next generation of scientists and engineers will be achieved.

The Turkish Antarctic Scientific Programme can be divided into seven main components, which are Marine Biology, Oceanography, Pollution, Geology, Climate Change, Medical Science, and Education and Outreach.

Turkey needs to construct a long term Antarctic scientific strategy and programme. TUBITAK (The Scientific and Technological Research Council of Turkey) should provide priority and exclusive support for Antarctic programme, both strategically and financially. Various components of the programme should be negotiated with respective government agencies. However, consolidation and finalization of the programme should be carried out by a single authorized

agency, TUBITAK, due to the international understanding of Antarctica as a place for peace and science.

There is no need to delay Turkish Antarctic Science Programme initiation awaiting comprehensive infrastructure build up. The programme could be started by getting involved in international collaborations, possibly on project fellowships for young scientists and participation in the international Antarctic scientific body, the Scientific Committee on Antarctic Research (SCAR). It is recommended that Turkey should become a SCAR Associate Member. The National ICSU Member (TUBITAK) should initiate this process by designating a delegate.

These are immediate requirements to initiate Turkish Antarctic Science Programme and will enhance next steps. Development of various scientific disciplines can be carried out, although marine sciences are deemed to be a priority area. The program needs to be written in detail, however it should be mentioned it is not limited to specific scientific research area or group but open to all suggestions.

The site selection for a Turkish Antarctic research station requires a thorough investigation and feasibility studies. Bases already established in Antarctica should be well studied to form background knowledge on previous international experience. Meetings should be held to gather initial information and research Antarctic research institutions should be visited before planning actual trips to Antarctica. All research base activities that Turkey will conduct in Antarctic need to follow the Environment Protocol. Besides, main concerns include;

- 1) Geographical suitability for targeted research activities;
- 2) Base location should provide safe anchorage;
- 3) Proximity to other bases for collaboration and support;
- 4) Infrastructure and operating costs;
- 5) Logistics and supply for summer or year-round and environmental assessment for impacts.

Moreover, constructing a new station requires a Comprehensive Environmental Evaluation to be approved by the Committee on Environmental Protection.

Feasibility studies for building a multi-purpose polar research vessel should be initiated immediately. Ownership and operational authority should be formulated. A business plan for the polar research vessel is required to effectively utilize the vessel year-round including non-Antarctic/non-polar activities. Existing national vessel options (including naval RVs) should be investigated with all aspects (legal, security, etc.) for possible intermediate solutions.

Preceding construction of a research base and a research vessel, a marine scientific expedition to Antarctica can be planned to reinforce the scientific contribution of Turkey to Antarctic research.

The Turkish Government should secure an initial ten-year budget allocation. Long-term investment in Antarctic research is very important to gain approval as a Consultative Party to the Antarctic Treaty. TUBITAK should be officially authorized to implement the Turkish Antarctic Programme. Besides, adoption of the Madrid Protocol will contribute to demonstrate interest in Antarctica and the Ministry of Environment is already following up on this issue. Moreover, all Antarctic activities and relevant information should be reported to the Electronic Information Exchange System (EIES).

It is recommended that more international activities be funded to increase the visibility and presence of Turkey, to meet with international representatives, to exchange information and to facilitate communication. In addition, it is recommended that Turkish scientists intensify existing cooperation and participate in relevant international conferences and workshops (e.g. SCAR Meetings and Open Science Conferences). Turkish researchers should be encouraged to take part in field work, international exchange and collaborative projects to increase the level of involvement in Antarctic research.

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